



Cornell  
University

ANNOUNCEMENTS

Graduate School  
*Social Sciences*

1970-71

#### **CORNELL UNIVERSITY ANNOUNCEMENTS**

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## GRADUATE SCHOOL OF MEDICAL SCIENCES

1300 York Avenue  
New York, New York 10021

J. Robert Buchanan, M.D., Dean of the Graduate School of Medical Sciences

Julian R. Rachele, B.A., M.A., Ph.D., Assistant Dean of the Graduate School of Medical Sciences

## UNIVERSITY PROFESSORS-AT-LARGE

Professors-at-Large are distinguished nonresident members of the University faculty. During short visits to the campus, of up to a month's duration, made at irregular intervals, they hold seminars, give public lectures, and consult informally with students and faculty.

Pierre Aigrain  
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Sir Eric Ashby  
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Sir Peter Medawar  
Charles S. Singleton  
Georg Henrik von Wright  
Elizabeth Mary Wilkinson

The business office of the Graduate School and the Office of the Dean are in Sage Graduate Center. Office hours are 8:30 A.M. to 4:30 P.M., Monday through Friday. The office is closed on Saturday.

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# Cornell University

## GRADUATE EDUCATION AT CORNELL

Graduate education at Cornell is based on the principle that no objective of a university lies deeper in its tradition or springs higher in its aspiration than does the nurture of scholarship. The advancement of learning, the methods of learning, and the criticism of learning occupy the highest reaches of university life and work. Graduate education brings into fruitful contact the most distinguished scholars and the most advanced students, that learning may be shared and that wisdom may be at least glimpsed.

The Graduate School provides an environment within which scholarly capability is encouraged to emerge, thrive, and transmit itself. The School arranges a set of conditions congenial to the student who is prepared to profit from the availability of advanced courses of study; the opportunity for sustained reflection; the companionship of active, full-time fellow students; the most highly developed libraries, laboratories, and other facilities for research; the prospect of independent discovery or recovery, of evaluation or revaluation; the daily presence of distinguished teachers; and the hope of attaining a firmly based structure of knowledge and a free and independent habit of judgment.

Freedom and independence are key qualities of scholarship, and graduate studies at Cornell are ordered so as to preserve them for both teacher and student. The Cornell principle is that scholars are begotten by other scholars, that judgments are formed by associating with the best judges, that learning lives in the unbroken succession of the learners and the learned, that genuine scholarship is always humane and rests ultimately on personal teaching and personal learning, that success in graduate studies must consist of satisfying the professor rather than a mute schedule of requirements. Graduate School standards are high, but they are maintained there not by the pronouncements of an office but rather by the men after whom such standards are themselves fashioned.

The Cornell graduate student selects not only the study he wishes to pursue, but also the scholar under whose tutelage he wishes to pursue it.



The candidate himself, no one else, makes the choice. Some candidates when they apply for admission have in mind the man or men with whom they wish to study. Those who do not are granted, under a temporary adviser, a semester in which to form an acquaintance and to come to a decision. The supervising professor is called the student's chairman. The chairman and his associate or associates, also chosen by the student, form the student's Special Committee. All such matters as the outlines of study, the observation of progress, the setting of general examinations, the conduct of the thesis, and other exercises leading to a graduate degree are determined within this small circle—the student and the professors he has selected to direct him. So successful is this arrangement and so strongly does Cornell believe in it, that the Special Committee enjoys extraordinary freedom and independence in conducting the student to his degree. The Graduate School sets no course requirement, no credit-hours requirement, no grade requirement. Within the broad agreements of the Graduate Faculty concerning residence, oral examinations, and thesis, the student will be recommended for his degree whenever his Special Committee judges him ready to receive it. When the Committee is satisfied, the requirements are.

The Cornell Graduate School has an enrollment of 3,300 students, and the Graduate Faculty consists of about 1,100 members. In contrast to many other graduate schools, approximately 98 percent of the students are full-time degree candidates, with the majority in programs leading to the Ph.D. degree.

The responsibility for administration of policies and procedures, including the general requirements, the establishment of Fields and subjects for study, admissions, and maintenance of records is placed in the hands of the dean and his staff under the guidance of the General Committee of the Graduate School. These matters are described in detail in *The Code of Legislation*, copies of which may be obtained by enrolled students from the Graduate School Office and which are also available for consultation in other academic and administrative offices of the University.

*The University expects that all graduate students at Cornell University shall, at all times, act with a mature and morally responsible attitude, recognizing the basic rules of society and the common rights of others.*

## ADMISSION

An applicant for admission to the Graduate School must (1) hold a baccalaureate degree granted by a faculty or university of recognized standing or have completed studies equivalent to those required for a baccalaureate degree at Cornell, (2) have adequate preparation for graduate study in his chosen field of instruction, (3) have fluent command of the English language, and (4) present evidence of promise in advanced study and research. Students from United States colleges and

universities should be in the top third of their graduating class. Other qualifications being equal, preference will be given to applicants under forty.

Applications for admission should be requested from the Graduate School, Sage Graduate Center, Cornell University, Ithaca, N.Y. 14850. Two letters of recommendation should be sent from the applicant's major instructors. Official transcripts from all the institutions of higher learning attended, and where required, the Graduate Record Examination or the Miller Analogies Test scores complete the application.

All applications from residents or citizens of the United States or Canada must be accompanied by a \$15 nonrefundable fee. Applicants from other countries who have been accepted for admission must pay this fee before registration.

Fellowship and admission applicants are urged to take the Graduate Record Examinations (GRE) Aptitude (Verbal and Quantitative) Tests of the Educational Testing Service no later than December, and to have the scores sent to the Cornell Graduate School as part of their application materials. Information about the times and places of test administrations may be obtained directly from the Educational Testing Service, Princeton, New Jersey 08540. The Field listings, pp. 53 ff., should be consulted for Fields requiring the scores of both the Aptitude Test and the pertinent Advanced Test.

Foreign applicants whose native language is not English and who have received their secondary or advanced education in the English language should submit to the Graduate School a statement to this effect signed by a responsible officer of a United States Embassy or Consulate or by an appropriate official of the educational institution involved. If English has not been the medium of instruction, applicants must take the Test of English as a Foreign Language by arrangement with Educational Testing Service, Princeton, New Jersey 08540. This testing program is available throughout the world. The test is given four times a year; information on times and places may be obtained directly from the address given above. The test score must be reported directly by the testing organization to the Graduate School; since this test is diagnostic, no final action on applications will be taken until the scores have been received. Admission to those applicants whose scores indicate unsatisfactory command of English may be denied, or it may be made contingent upon evidence of improvement.

## CATEGORIES OF ADMISSION

**DEGREE PROGRAMS.** It is expected that most applicants for admission intend to pursue a program for an advance degree. Applicants may specify candidacy for the Master of Arts or Master of Science or one of the professional Master's degrees listed on pp. 26-30. However, since Cornell has a strong commitment to doctoral work, most students are encouraged to enroll in a doctoral program. In some fields, students registered in a doctoral program may be required to seek a Master's degree as an initial step in the program.

## 8 DEGREE REQUIREMENTS

Only under unusual circumstances will anyone who already holds an advance degree be permitted to apply for the same degree.

**PROVISIONAL CANDIDACY.** Under circumstances in which it is difficult to evaluate the academic background of qualified applicants, they may be admitted to *provisional* candidacy. Ordinarily only one semester of study in provisional candidacy is permitted, and the student who fails to qualify for candidacy at the end of that time may be requested to withdraw from the University.

**NONCANDIDACY.** When staff and facilities are available, the Graduate School will admit some applicants who do not intend to work toward an advanced degree at Cornell but who have special objectives for formal study or scholarly work at the graduate level, provided they satisfy all the entrance requirements expected of degree candidates. Registration in noncandidacy is restricted to two semesters.

**CHANGE OF STATUS.** A student who wishes to change his status from nondegree candidacy to regular candidacy or from one degree or Field to another, or who, after receiving the Master's degree, wishes to undertake candidacy for the doctorate, must submit to the Dean of the Graduate School a written request giving reasons for the proposed change. Provisional candidacy is automatically reviewed at the end of each semester; therefore, no letter is necessary.

## DEGREE REQUIREMENTS

**THE SPECIAL COMMITTEE.** The general degree requirements of the Graduate School are kept at a minimum in order to give the student maximum flexibility in choosing a desirable program of studies. Since progress in graduate study depends so much on the individual student's situation, there are no course or grade requirements imposed by the Graduate School. The student's program is developed with the aid and direction of a Special Committee chosen by the student and is designed to fit his specific needs and desires. Satisfactory progress toward the degree is judged solely by the Special Committee rather than by any arbitrary standards imposed by the Graduate School.

The Special Committee under which a Master of Arts or a Master of Science candidate carries on his work is composed of a chairman who represents the major subject, and one representative of an appropriate minor subject. The Special Committee of a doctoral student is composed of a chairman, representing the major subject, and two other members representing other areas of interest. The chairman of the Special Committee directs the student's thesis research. Some Fields of study require two minor subjects for doctoral programs while others require only one, but all Ph.D. Special Committees have three members.

The Field and the major subject, as well as the chairman of the Special Committee, are selected by the incoming student. It is his privilege to ask any member of the Graduate School Faculty in the Field of his major subject to serve as his chairman. The chairman in

turn advises the student about minor subjects and faculty members who might represent them on his Special Committee. The choice of major and minor subjects and the formation of the Special Committee must be recorded in the Graduate School Office within two weeks of the beginning of residency. However, since the student may be uncertain of his aspirations at that time, he is encouraged to change the membership of his Special Committee as his aims become more definite.

In some of the larger Fields of the Graduate School the difficulty in making a wise selection of a Committee is so great that the Field Representative or other faculty member may serve temporarily as the chairman while the student seeks a permanent chairman and Committee.

The members of the Special Committee direct the student's program and decide whether he is making satisfactory progress toward the degree. They conduct and report on oral examinations, and they approve the thesis. The Committee and the student constitute an independent working unit. All members of the Graduate School Faculty, however, are free to participate in the scheduled examinations and review the theses of candidates for degrees.

The organization of the Graduate School at Cornell is based on a concept of fields of study independent of colleges and departments. It is thus possible for a graduate student to take courses in any division of the University and to choose major and minor subjects without regard to organizational lines.

## RESIDENCE

The Graduate Faculty regards study in residence as essential. Although a person working off campus may attain proficiency in a technique or even in a field of knowledge, he may fail in other ways to attain the breadth of knowledge necessary for scholarly work. In addition to contact with the libraries and physical facilities of the University, he needs the daily acquaintance, company, aid, and stimulus of others engaged in similar pursuits. He should form the habit of attending lectures, seminars, and meetings of groups in whose activities he takes interest.

Full-time study for one semester with satisfactory accomplishment constitutes one residence unit. The Graduate School Faculty requires that each candidate for a Master's degree earn two units of residence, and for the Ph.D. degree, six units of residence. However, a longer time is generally required to obtain the degree.

A student must complete all the requirements for the Master's degree in four years and for a doctoral degree in seven years.

A student in a doctoral program may earn no more than two units for work done in Summer Research, Summer Session, and the Division of Extramural Courses. At least four of the six required units must be earned as a full-time student, earning three-quarters of a residence unit or more each term, and two of the last four units must be earned in successive terms of full-time study on the Cornell campus.

## 10 DEGREE REQUIREMENTS

**TRANSFER OF RESIDENCE.** Candidates for the Master's degree may not count study in other graduate schools as part of their residence. Candidates for the doctorate may be permitted to count study for the Master's degree as equivalent to two residence units; those who have received training of an exceptional quality and amount may petition for more. No commitment regarding this may be made until after the student has entered into residence and his Special Committee has had opportunity to judge his accomplishments. The residence transferred must not exceed that which would have been earned under similar circumstances at Cornell. Credits for study as an undergraduate or as a special student, even in courses designed primarily or wholly for graduate students, will not be allowed.

**SUMMER SESSION.** To receive residence credit for the Summer Session, the candidate must register in both the Summer Session and the Graduate School and must file a statement of courses satisfactory to his Special Committee. A student may, with his Special Committee's prior approval, earn one-half of a residence unit by completing eight hours or more of credit in the eight-week session, or two-fifths of a unit for six hours or more in the six-week session.

Requirements for Master's degrees may, upon approval of the appropriate graduate Field, be completed solely during the summer period if instruction in the chosen major and minor subjects is offered. Only two residence units for study in the Summer Session may be accepted in fulfillment of requirements for the doctorate. Residence may be transferred for study during one Summer Session preceding matriculation in the Graduate School if this study is an integral part of the graduate program subsequently undertaken, and if the transfer is recommended by the student's Special Committee and approved by the dean of the Graduate School.

**SUMMER RESEARCH.** To encourage students to continue their studies during the summer period, no tuition or fees are charged for summer research if the student has been registered during the previous academic year. Substantial funds are also available for summer fellowship and research assistantship support. There is a special summer fellowship program for students who have held teaching fellowships during the previous academic year. Students have access to the regular services of the University Clinic and Infirmary during the summer without charge. Under certain conditions, students may also accumulate residence credit in summer research.

**PART-TIME STUDIES.** Essentially, all graduate students at Cornell are full-time students. If employment is necessary, students may hold positions requiring up to ten hours of work per week without reduction of residence credit. Teaching fellows and research assistants whose duties require up to twenty hours a week can obtain full residence credit.

Part-time employees are eligible for residence units as follows.



EMPLOYMENT	RESIDENCE UNITS ALLOWABLE PER SEMESTER		
<i>Total clock hours per week</i>	<i>Contributory in the major field of study and on campus</i>	<i>Noncontributory but on campus</i>	<i>Off campus</i>
0-10 hours	1 unit	1 unit	1 unit
11-20 hours	1 unit	$\frac{3}{4}$ unit	$\frac{3}{4}$ unit
21-30 hours	$\frac{3}{4}$ unit	$\frac{1}{2}$ unit	(See below)

Those employed for more than twenty clock-hours per week off campus, or more than thirty clock-hours per week under any circumstances, may earn a maximum of two-fifths of a residence unit per semester through registration in the Division of Extramural Courses, but this will be permitted only on the basis of petition approved prior to the time that the work is undertaken. For the degree of Master of Arts or Master of Science a maximum of one unit, and for the degree of Ph.D. a maximum of two units of residence may be earned in this way.

To accumulate residence units for course work completed through the Division of Extramural Courses, fifteen credit hours are the equivalent of one residence unit, and six credit hours the equivalent of two-fifths of a unit—the smallest fraction that will be recorded by the Graduate School toward fulfillment of residence requirements. Detailed information concerning extramural courses and registration procedures may be obtained from the Division of Extramural Courses, B-20 Ives Hall.

## EXAMINATIONS

The Special Committee conducts the examinations that are required for the degree. At the discretion of the Special Committee these examinations may be entirely oral or both oral and written. The following examinations are required.

For the Master's degree: A final examination is required, which under certain conditions may be combined with the Admission to (Ph.D.) Candidacy Examination.

For the doctoral degrees: (1) A comprehensive Admission to Candidacy Examination for formal admission to doctoral candidacy is required. This examination may not be taken until two units of residence credit have been accumulated; it must be attempted before the beginning of the student's seventh unit of residence. Two units of residence must be credited after this examination. (2) A final examination, which is primarily concerned with the doctoral dissertation, is required.

In Fields that so desire, the Special Committee may, after the Admission to Candidacy Examination has been taken, nominate the student for a Master's degree without the requirement of a thesis whether or not admission to candidacy for the Ph.D. has been approved. The degree would be awarded after the completion of four units of residence.

In some Fields a qualifying examination is given at an early date to determine the student's fitness for advanced study and to help the Special Committee plan his program.

When the candidate has completed the thesis, he presents it to the Special Committee for the final thesis examination. This examination is oral and covers subject matter related to the thesis topic.

## FOREIGN LANGUAGE REQUIREMENTS

Each Field of instruction has its own foreign language requirements which it considers most useful to the particular area of study. Any Special Committee may, at its discretion, require knowledge of foreign languages beyond the announced requirements.

Candidates required by Fields to demonstrate reading ability in French, German, Russian, or Spanish must pass the Graduate School Foreign Language Test given by the Educational Testing Service, Princeton, N. J. 08540, and administered by the Graduate School. A charge is made to cover the cost of administering each test. As an alternative, candidates may pass the reading part of the CEEB college language test with a score satisfactory to the Division of Modern Languages. Students who take examinations in languages other than French, German, Russian, or Spanish, or in a speaking knowledge of any language, should arrange with the Graduate School Office for assignment to a suitable examiner. Arrangements to demonstrate a higher level of proficiency in a foreign language, as required by some Fields, may also be made at the Graduate School Office.

A student may petition the dean to transfer a language examination taken elsewhere to his record at Cornell.

Courses designed to aid graduate students in learning how to read French, German, Russian, and Spanish are given by the Division of Modern Languages in cooperation with the Graduate School Faculty.

## THESIS

Candidates for the degree of Master of Arts or Master of Science are required to submit a thesis in fulfillment of the requirements for the degree (except as stated on p. 11). Some Fields also require a thesis for professional Master's degrees. Candidates for the doctoral degree must complete a thesis which constitutes an imaginative contribution to knowledge. The faculty requires publication of Ph.D. theses by abstract or microfilm.

## FINANCIAL SUPPORT

Extensive financial resources are available to Cornell graduate students to help them defray the cost of their education. Approximately 3,000 of the 3,300 graduate students receive financial aid in the form of fellowships, teaching assistantships, and research assistantships.

In many cases the stipends awarded to graduate students are not high enough to cover living expenses completely. A great deal depends on the level of subsistence to which the individual has become accustomed and the sacrifices that he is willing to make for his education. Experience has shown that married students with dependent children have particular financial difficulties. The minimum subsistence income which such students need is about \$4,000 plus tuition and the General Fee per academic year. Since stipends are frequently lower than this figure, it may be necessary for the student to find other sources of supplementary income such as loans in order to complete his studies.

Since the demands of graduate study are so great, students are discouraged from trying to support themselves by unrelated employment.

No special forms are available for financial aid. The applicants should check the type or types of appointment for which he wishes to be considered on the application for admission form.

## TEACHING FELLOWSHIPS

The duties of a teaching fellow normally involve classroom and laboratory instruction of undergraduates and, as such, play a major role in the educational process and the academic atmosphere of the University. Since a large majority of Cornell's graduate students eventually seek a career in teaching, the experience gained from these appointments is an invaluable part of the student's development. In most Fields of study students are encouraged to spend some time in teaching, and in a few Fields the faculty believe the experience so important that they require it of all students in doctoral programs. An appointment as a teaching fellow is usually in the student's major Field or in one that is closely related. The duties require from ten to twenty total clock-hours a week of the student's time, depending on the Field. A teaching fellow whose duties are in his major Field of interest and do not exceed twenty hours is eligible for full residence credit. Salary for a fifteen-hour week will be \$2,700 with a slightly higher amount for longer hours, supplemented by a scholarship which covers tuition and the General Fee. A special summer fellowship program is also available for teaching fellows. Because of possible problems in communication with undergraduates, applicants from non-English-speaking countries are not normally appointed as teaching fellows in their first year at Cornell. Teaching appointments are made by department chairmen. Applications for these positions should be made to the Field Representative of the Field offering the major subject of interest to the student.

## RESEARCH ASSISTANTSHIPS

The duties of a research assistant involve work on a research project. The work performed is frequently applicable to the student's thesis research and is under the direction of the chairman of his Special Com-

mittee. The student is required to spend twenty hours a week, but if the research is in the Field of his major interest he can earn full-time residence credit. In many Fields of study such appointments are normally made after completion of at least one year of graduate study.

## FELLOWSHIPS

A fellowship ordinarily is awarded in open competition to a full-time student who is a candidate for a higher degree (usually a Ph.D.), primarily on the basis of scholastic ability and promise of achievement as a graduate student. The award is made as a tax-exempt gift, and it usually not only covers tuition and the General Fee but also may provide a substantial stipend for living expenses during tenure. However, if the combined anticipated income of the student and his spouse for the year from September 1, 1970, to September 1, 1971, exceeds \$8,000, the fellowship may be adjusted accordingly. A student who holds a fellowship is free to select his own research project, subject to the approval of his Special Committee, and his primary responsibility is to pursue his studies for his degree. The award of the fellowship does not obligate the holder to render services to the University, except that in certain fields some teaching is required of all graduate students for the sake of experience and training, nor is the holder of a fellowship committed in any way with respect to future employment. The holder of a fellowship may accept no other appointment or employment without permission of the Fellowship Board; however, teaching responsibilities will usually be approved as a routine matter if they contribute to the student's graduate program and do not exceed ten clock-hours of work per week.

More than 450 fellowships are under the direct supervision of the Cornell Graduate Fellowship Board or of academic units of Cornell. The range of stipend (in addition to tuition and the General Fee and, in some cases, dependency allowances) for different categories of fellowships available to first-year students is indicated below.

Cornell Andrew D. White Fellowships—\$2,500–\$3,000

Cornell Graduate Fellowships—\$2,000

Cornell Fellowships from Special Endowments—\$1,000–\$2,000

Industrial Fellowships—\$1,500–\$2,500

Many other fellowships are offered to students majoring in certain Fields of study, and some of these are noted in the descriptions of the Fields. (See also Summer Fellowship Support, p. 16.)

A program is under way at Cornell for students in the humanities and in selected Fields of the social sciences (Anthropology, Economics, Government, Linguistics, Psychology, and Sociology). Its aim is to reduce the time required for a Ph.D. degree. This is to be accomplished through a greatly enlarged program of support, without any sacrifice in the academic standards or requirements for the degree. Incoming students in the Fields covered by the program will be guaranteed support for four years, including the summer following the first academic year. In most cases, there will be fellowship support for three of the years, with

increasing stipends accompanied by full tuition and the General Fee. One year, or in a few cases up to two years, of teaching fellowship will provide both support and valuable experience and training. Dependency allowances will be available. About 90 percent of those in the program will be given modest summer scholarships to enable them to continue their studies throughout the year. This particular program is assured only for students entering in the fall of 1970 or before.

Many private and federally supported fellowships are also administered by the Graduate School. National Science Foundation Traineeships, as well as National Defense Education Act (NDEA) Title IV Fellowships, are available to United States citizens. The application deadline for these is February 1 for the following academic year; candidates for these fellowships are nominated by the Field, having been chosen from among those students applying. NDEA Title IV Fellowships offer three years of support to doctoral students who intend to enter a teaching career. (Since completion of a Ph.D. program at Cornell normally requires four years, and because the program is aimed at prospective teachers, NDEA Fellows are normally expected to gain teaching experience and have support during one of the years as teaching fellows.)

The purpose of the NDEA Title VI (NDFL) Fellowship program is to encourage individuals taking advanced training in languages and in associated area studies designated as being of critical importance to the United States. For area studies, see pp. 32-42. Applicants who are interested in NDFL Fellowship support must so indicate when requesting their application materials for admission. National Institutes of Health Traineeships are available and are offered by Fields which have been awarded such grants.

A space is provided on the admission application form in which the student may indicate the type of support for which he wishes to be considered. No special fellowship application form is required.

Prospective graduate students should also consider applying for fellowships awarded on a national basis by the National Science Foundation, the Atomic Energy Commission, the Public Health Service, the Woodrow Wilson National Fellowship Foundation, and the Ford Foundation. These programs have deadlines for applications, some as early as December 1. Applicants should check on the date pertinent to the fellowship. In some cases it is possible for winners of NSF and AEC awards and for PHS Fellows to hold half-time appointments as teaching fellows for an additional stipend.

New York State provides several forms of financial support. The Herbert H. Lehman Fellowship program is open to applicants whose interest is in social sciences or public or international affairs, and the Fellowship is open to applicants from all states. These Fellowships are awarded on a competitive basis and may be used only in New York State institutions; they provide each recipient with \$4,000 for the first year of graduate study and \$5,000 for each subsequent year. New York State residents are eligible for Regents College Teaching Fellowships or Regents Fellowships for Doctoral Study in Arts, Science, and Engineering. Applications for these must be made by December 1 on forms



obtained from the Regents Examination and Scholarship Center, New York State Education Department, Albany, New York 12224.

As agreed upon by some of the members of the Council of Graduate Schools in the United States, the regular time for notification of award from Cornell of fellowships and scholarships for the succeeding academic year is April 1. *All fellowship and scholarship applications received by February 1 will be considered for April awards*, and every effort will be made to notify each applicant approved for award no later than April 6 as to whether he has a fellowship or is named as an alternate. It is hoped that the awardees will notify the Graduate School no later than April 15 of their acceptance or rejection of the award; failure to do so will be considered a declination. Applications received after February 1 will be considered only if vacancies occur.

## SUMMER FELLOWSHIP SUPPORT

The Graduate School Faculty believes that graduate education, in contrast to undergraduate programs, should be on a year-round basis to enable students to obtain their degrees in a reasonable period of time. The majority of Cornell Ph.D. students are, therefore, supported over the summer period through research assistantships and fellowships. Normally the summer period is devoted to informal study and research rather than to course work, and no tuition or fees are charged.

Two extensive summer fellowship programs based on financial need are noteworthy. One involves awards to those students who have been full-time teaching fellows. The other involves fellowship support to students who are in the final stages of their thesis preparation. It is expected that some 250 summer fellowships will be awarded for the summer of 1971 under these two programs. Another 1,300 students will be supported as research assistants, and 250 students will be on twelve-month fellowships.

## RESIDENCE HALL ASSISTANTSHIPS

Assistantships in University residence halls are available for men and women graduate students in any academic field. They are most appropriate for graduate students who desire experience in working with undergraduate students and University staff while contributing financially to their own study.

In the women's area eighteen assistantships are available, offering living expenses and a yearly stipend. Details of the assistantships and application forms may be obtained by writing to the Office of the Dean of Students, 133 Day Hall. A personal interview is desirable but not always required.

In men's housing two types of positions are available, the head residency and resident advisorship. There are head residencies for single and married men. A head resident receives his apartment, a stipend of

\$700, payment of one-half tuition and fees, and a board package which varies according to his marital status. Resident advisorships are available to single men and provide room, a \$500 stipend, payment of one-half tuition and fees, and twenty meals weekly in University facilities. There are eight head residencies and resident advisorships. These men work in counseling, guidance, and programming, and direct the activities of undergraduate residence counselors.

Applications should be addressed to the Office of the Dean of Students, 133 Day Hall; the deadline for application is January 15. A personal interview is required for acceptance for a position.

## PRIZES

Several University prizes are open for competition to all students, including graduate students. The Committee on Prizes of the University faculty publishes an *Announcement of Prize Competitions*, which may be obtained from the Visitor Information Center, Day Hall.

Two other prizes are open exclusively to graduate students:

**THE GUILFORD ESSAY PRIZE.** Until at least 1971 a special prize of \$120 will be assigned annually to that graduate student who, in the judgment of the Graduate Faculty, writes the best English prose. Each competitor must submit, at or before 12 M. of the last Monday in November, specimens of his English prose, preferably prepared as a normal part of his training in candidacy for an advanced degree.

**THE PHILOSOPHY PRIZE.** A prize of \$50 is awarded to the graduate student who submits the best paper embodying the results of research in the Field of Philosophy. The subject of the paper may be historical or critical or constructive. It may be concerned either with problems of pure philosophy or with the philosophical bearing of the concepts and methods of the sciences. Papers must be submitted on or before the first day of May.

Papers submitted in competition for either prize must be typewritten on bond paper (a clean *ribbon* copy), double-spaced, at least 1,500 and not more than 5,000 words in length, and signed with an assumed name, the real name and address of the competitor being enclosed in a sealed envelope, superscribed with the assumed name. They are to be deposited in the Office of the Graduate School. A student may not submit more than one paper.

## LOANS

Only graduate students duly registered in a degree-granting program are eligible for loans. Provisional or noncandidate students are not.

Cornell utilizes university, state, and National Defense Loan programs. The total amount of loan recommended, regardless of source, is

based upon the financial need of the student as analyzed by the University Committee on Financial Aid.

Applications for all types of loans are available at the Office of Scholarships and Financial Aid, 109 Day Hall.

## PART-TIME EMPLOYMENT

Opportunities for part-time work are often available in connection with departmental research projects or other activities. Applications for this type of work should be made directly to the department concerned. A candidate may find employment in research or other work closely allied to his academic interest valuable. On the other hand, progress in candidacy is difficult when a student attempts to support himself wholly or partially by work unrelated to his studies. It usually is sounder economy to borrow from the Office of Scholarships and Financial Aid and keep employment to a minimum. However, the University maintains a part-time employment service in that office.

## EMPLOYMENT FOR WIVES OF STUDENTS

Cornell University offers many nonacademic positions for working wives through the Personnel Division, B-12 Ives Hall. Types of work include secretarial and clerical work, work for technicians in the various laboratories, library work, limited nursing positions, and some administrative positions. Applications may be made through the Personnel Division upon arrival on campus. Applicants for academic positions should apply to the specific departments in which they are interested.

In addition to the University positions, the Ithaca area offers opportunities for similar positions in small industrial plants, Ithaca College, the local hospital, and various businesses, as well as for teaching positions in the public school system and some professional positions in service agencies. Applicants should go to the New York State Employment Office for further information regarding these opportunities.

## GENERAL INFORMATION

**COURSES AND GRADES.** The Graduate School is not a course-offering agency. Therefore, students wishing information about courses or grades should inquire at the Office of the Registrar. However, the Graduate Faculty has ruled that a course may not be dropped or changed from credit to audit after the tenth week of classes.

**ACTIVITIES FOR GRADUATE STUDENTS.** Cornell is in a small academic town in central New York State. It has the advantages of a small-town atmosphere but at the same time has many cultural aspects that rival those of any large city. A significant concert program brings internationally famous artists to Ithaca. Dramatic programs, talks by

visiting lecturers, and art exhibitions fill the weekly calendar of the University and present such a wide choice of events that a student cannot possibly attend all in which he is interested.

There are places for graduate students in many extracurricular activities shared by undergraduates; among others are intramural sports, drama, Glee Club, Sage Chapel Choir, publications, music, and folk dancing. A Graduate Student Activities Committee is active in scheduling weekly social events. A Graduate Wives' Club has had a long tradition of activity for the wives of graduate students. Willard Straight Hall and the Sage Graduate Center provide facilities for graduate groups and aid in planning special functions for them.

Cornell United Religious Work (CURW) includes a range of activities for graduate students. Its offices are in Anabel Taylor Hall, which serves as headquarters for chaplains who represent several denominations and who may be consulted by students.

Cornell's location in the Finger Lakes Region of New York State stimulates outdoor activity. Many swimming and boating facilities are available. In addition, Cornell operates a private eighteen-hole golf course; indoor and outdoor swimming facilities; indoor skating rink; tennis, handball, and squash courts; gymnasium; and riding stables all of which are open to graduate students. A variety of ski resorts also operate nearby.

Almost all fields of study sponsor weekly seminars for their faculty and graduate students.

**COUNSELING.** The University maintains a variety of counseling services available to graduate students. A student's primary academic counselors are the members of his Special Committee.

Other counselors who are able to help in matters of various kinds will be found in the Office of the Dean of Students, the Office of Scholarships and Financial Aid, the International Student Office, the Gannett Medical Clinic, and the Sage Graduate Center.

**INTERNATIONAL STUDENTS.** Cornell has, since its founding, welcomed students from abroad. Currently 1,120 foreign students representing eighty-seven countries are pursuing study in a variety of fields.

In addition, each year over one hundred faculty members spend some time abroad in study and research, often in close association with foreign universities. This creates within the University community opportunities for students from other countries to meet and exchange ideas with members of the Cornell faculty, who often have first-hand knowledge of several countries and understand and appreciate a variety of cultures.

Special programs within the Graduate School permit study in depth of particular areas such as Africa, Asia, Southeast Asia, Latin America, and the Near East. Students from those areas have an opportunity to contribute to such programs.

The Ithaca community is in a natural setting which allows for enjoyment of many recreational activities. In addition, varied cultural and intellectual activities are sponsored by the University. Tours of the

community are conducted at the beginning of the fall semester. A group of Cornell faculty and Ithaca families maintain a Host Family Program, in which foreign students are invited to share in some aspects of American family life in the Ithaca community. Because the University population is a varied one, the community itself, although not large, tends to have a more cosmopolitan atmosphere than most other small cities, and the student can usually find an outlet for a wide variety of interests.

The University maintains an International Student Office at 142 Day Hall. Students from abroad are asked to report to this Office upon arriving in Ithaca and are invited to consult the staff on any questions they may have. The Office works in close association with academic advisers and sponsors, and also with persons involved in a number of student and community programs in efforts to enrich the international and cultural life of Cornell.

## HEALTH REQUIREMENTS ON ENTRANCE

The following health requirements for entering graduate students have been adopted by the Board of Trustees of Cornell University. The responsibility for fulfilling these requirements rests upon the student; failure to do so may result in loss of the privilege of registering the following term.

**IMMUNIZATION.** A satisfactory certificate of immunization against smallpox, on the form supplied by the University, must be submitted before registration. It will be accepted as satisfactory only if it certifies that within the last three years a successful vaccination has been performed. If this requirement cannot be fulfilled by the student's home physician, opportunity for immunization will be offered by the Cornell medical staff during the student's first semester, with the cost to be borne by the student. If a student has been absent from the University for more than three years, immunity will be considered to have lapsed and a certificate of revaccination must be submitted.

The University Health Services strongly recommend that all graduate students be immunized against tetanus before entering the University. Students may, however, obtain initial and all booster tetanus toxoid immunizations at the Gannett Clinic for a nominal charge.

**HEALTH HISTORY.** Graduate students, when accepted, must submit *health histories* on forms supplied by the University. These should be returned promptly to the Gannett Medical Clinic. A University physician will review the material before it becomes part of the student's permanent health record. All information given is confidential. After arrival at Cornell, if the medical history indicates a need, a student will be given an appointment to consult a physician at the Clinic. When a student has been away from the University for more than a year, he must, upon reentrance, submit an interim health history on a University form.



**X RAY.** Every student is required to have a chest x ray. Opportunity to satisfy this requirement is given during the student's first week on campus. The cost of the x-ray examination is included in the General Fee. When a student who has been away from the University for more than a year wishes to reenter, he must, at his own expense, once more fulfill the chest x-ray requirement.

## HEALTH SERVICES AND MEDICAL CARE

Health services and medical care for students are centered in two Cornell facilities. The Gannett Medical Clinic (outpatient department), 10 Central Avenue, and the Sage Infirmary.

Students are entitled to unlimited visits at the Clinic. Appointments with individual doctors at the Clinic may be made by calling or coming in person. (An acutely ill student will be seen promptly whether he has an appointment or not.) Students are also entitled to laboratory and x-ray examinations indicated for diagnosis and treatment, hospitalization in the Sage Infirmary with medical care for a maximum of fourteen days each term, and emergency surgical care.

On a voluntary basis, insurance is available to supplement the services provided by the General Fee. For further details see the *Announcement of General Information*. If, in the opinion of the University authorities, the student's health makes it unwise for him to remain in the University, he may be required to withdraw.

If a student prefers to consult a private physician rather than go to the Clinic, or to have the services of a private doctor while a patient in Sage Infirmary, he must bear the cost of these services.

## LIVING ARRANGEMENTS

**DORMITORY ACCOMMODATIONS.** The University has established Sage Hall as a graduate residential center. Its dormitory facilities accommodate approximately 75 men in the north side of the building and 115 women in the south side. The Graduate Center, which is available for use by graduate students and faculty, also contains a cafeteria seating 200, study rooms, and lounges. In addition, Cascadilla Hall has accommodations for approximately 160 single graduate men.

Applications for dormitory accommodations may be obtained any time after January 1 for the coming academic year by writing the Department of Housing and Dining Services, 223 Day Hall.

**FAMILY ACCOMMODATIONS.** The University has three apartment developments for married students and their families. They are Cornell Quarters, Pleasant Grove Apartments, and Hasbrouck Apartments, with housing for a total of 420 families. All apartments are unfurnished. For further information and application, write to the Department of Housing and Dining Services, 223 Day Hall.

**OFF-CAMPUS HOUSING.** The Department of Housing and Dining Services, 223 Day Hall, maintains files of voluntarily listed accommodations for use of students and staff members who call at the office. Because the list of available accommodations is constantly changing, it is not practical to mail listings, nor is it feasible to maintain a waiting list of persons seeking accommodations.

## MOTOR VEHICLES

The University does not encourage student use of motor vehicles but recognizes that in certain cases it may be necessary. University regulations apply to all types of motor vehicles, including automobiles, motorcycles, motor bikes, and motor scooters.

Every student who owns, maintains, or for his own benefit operates a motor vehicle in Tompkins County, must register it with the Safety and Security Division, even though that vehicle may be also registered by faculty, officers, or employees. All students must register motor vehicles within the prescribed time for University registration at the beginning of the fall term (*exception*: students who are not then subject to this rule but later become subject to it must register vehicles within five days after becoming so subject). Nonregistered vehicles may not be parked on campus at any time. Students entering the University for the spring semester or reentering after a period of absence must register motor vehicles with the Safety and Security Division at the time of, or within the time for, general registration.

Every student who has a motor vehicle must comply with the following requirements: (1) the student must be legally qualified to operate a motor vehicle in New York State; (2) the vehicle must be registered in New York State or legally qualified to be operated on the highways of New York State; (3) the vehicle must be effectively insured against public liability for personal injury and property damage for the minimum of \$10,000-\$20,000-\$5,000, for the duration of such registration and while the vehicle is under the control of the registering student; (4) the student registration fee covering the fall and spring terms, or any part thereof, is \$4 and is due and payable in the Treasurer's Office on the same date as tuition and other fees. In case of late registrants, the fee will be due within a week after such registration. A fine is levied if the vehicle is not registered within the specified time.

No student may park his motor vehicle on the campus from 8:00 A.M. to 5:00 P.M. Monday through Friday, or from 8:00 A.M. to 1:00 P.M. Saturdays. Certain areas are restricted twenty-four hours a day; such areas include "no parking" zones, dormitory parking areas, and areas listed as limited at all times to holders of specific permits.

Special area parking permits are issued only after careful consideration by the Safety and Security Division Office.

The student's registration in the University is held to constitute an agreement on his part that he will abide by all its rules and regulations

with regard to traffic and parking or suffer the penalty prescribed for any violation of them.

Correspondence regarding motor vehicles should be addressed to the Board on Traffic Control, G-2 Barton Hall.

## CAREER, SUMMER PLANS, AND PLACEMENT CENTER

The Career, Summer Plans, and Placement Center at 14 East Avenue is a clearing house for jobs in business, industry, government, and teaching, as well as for study programs leading to the professions. It serves as an information center for careers, teacher placement, fellowships, techniques of job hunting, and summer experiences (work, study, travel, service projects). More than a thousand recruiters visit the campus each year representing employers and graduate schools. Students and faculty may be kept up to date on the activities of the Center by registering to receive its *Newsletter*. Alumni may be served by either the *Job Bulletin* or the *Registrants Available Bulletin*. Through the support and cooperation of the Cornell Club of New York and the Cornell Society of Engineers, a placement office is maintained in New York City primarily for alumni living in that area.

## TUITION AND FEES

Tuition and fees<sup>1</sup> become due when the student registers. Any student who fails to pay his tuition, fees, and other indebtedness to the University at the Treasurer's Office within the prescribed period of grace will be dropped from the University unless the treasurer has granted him an extension of time to complete payment. The treasurer is permitted to grant such an extension when, in his judgment, the circumstances of a particular case warrant his doing so. For any such extension the student is charged a fee of \$5. A reinstatement fee of \$10 is assessed against any student who is permitted to continue or return to classes after being dropped from the University for default in payments. The assessment may be waived in any instance for reasons satisfactory to the treasurer and the registrar when such reasons are set forth in a written statement.

Students registering at any time during the last ten weeks of any term are required to pay tuition at the rate of 10 percent of the regular tuition of the term for each week or fraction of a week between the day of registration and the last examination day of the term.

*Tuition or fees may be changed by the trustees at any time without previous notice.*

**REGISTRATION DEPOSIT.** Every applicant for admission must make a deposit of \$35 after receiving notice of acceptance, unless he has

1. All statements in this section are prepared by the University treasurer, who alone is authorized to interpret them.

previously matriculated as a student at Cornell University. This deposit is used at the time of first registration to pay the matriculation fee, chest x ray, and examination-book charge, and covers certain expenses incidental to graduation if the student receives a degree. The deposit will not be refunded to any candidate who withdraws his application after May 10 or more than fifteen days after his admission approval. This fee is *not* covered by University fellowships, scholarships, or assistantships.

**TUITION.** Tuition is \$200 a term for all students registered in the Graduate School whose major chairman is on the faculty of the statutory divisions<sup>2</sup> of the University. Those with major work in the School of Nutrition, the Field of Education, and the Division of Biological Sciences also pay \$200 a term. All students in other divisions must pay tuition of \$910 a term. Tuition is payable at the beginning of each term.

Upon recommendation by the appropriate college dean and by action of the controller, a member of the teaching or scientific staff of one of the statutory schools or colleges may obtain waiver of tuition in the Graduate School if his major field of study is in a statutory school or college.

Assistants in statutory schools or colleges who are on twelve-month appointments and who are registered for Summer Research for credit in the Graduate School may be recommended for waiver of tuition during the summer period under the above limitations. This waiver of tuition does not apply if the student registers in the Summer Session or is not doing productive work for the department.

Any student who is to receive less than full residence credit because of his employment should apply for proration of tuition on forms procurable at the Graduate School Office. *Tuition is based on residence eligibility.* See pp. 10-11.

**GENERAL FEE.** A fee of \$287.50, payable at the beginning of each term, is required of each student registered in the Graduate School whose major chairman is on the faculty of one of the statutory divisions,<sup>3</sup> the School of Nutrition, the Field of Education, or the Division of Biological Sciences. All others pay a fee of \$265.00. This General Fee contributes toward the services supplied by the libraries, Clinic and Infirmary, and the student union in Willard Straight Hall, and pays a portion of the extra cost of laboratory courses and general administration.

A student who is regularly registered in the Graduate School for either one or both terms of the academic year and has paid the above fee is entitled to these services while in residence during the summer immediately following the academic year without payment of an additional General Fee. If such a student registers with the University during the summer, he is liable for payment of any tuition and other fees, and

2. The statutory divisions are the Veterinary College, the Colleges of Agriculture and Human Ecology, and the School of Industrial and Labor Relations.

3. The statutory divisions are the Veterinary College, the Colleges of Agriculture and Human Ecology, and the School of Industrial and Labor Relations.

must present his ID card at the time of payment of these charges in order to claim exemption from payment of the General Fee.

A graduate student who returns to the University to present his thesis and to take the final examination for an advanced degree, all other work for that degree having been previously completed, must register as a "Candidate for Degree Only" and pay a fee of \$35.

## OTHER FEES

**THESIS FEE.** Each doctoral candidate must pay \$30 at the time of depositing the approved thesis and abstract in final form. This fee covers the cost of preparing a master microfilm of the entire thesis; of publishing the abstract in the bimonthly periodical *Dissertation Abstracts*; of mailing the microfilm and abstract to the microfilm publisher; and of binding both copies of the thesis for deposit in the University Library.

**LIMITED REFUNDS.** Part of the tuition and General Fee will be refunded to students who officially withdraw or take a leave of absence during the first nine weeks of a term. A student arranges for a leave of absence or withdrawal at the Graduate School Office. Students who withdraw are charged tuition and the General Fee at the rate of 10 percent for each week or fraction of a week from registration to the effective date of withdrawal. No charge is made if the student begins his leave of absence or withdraws within six days of registration. No part of the registration or matriculation fee is refundable.

**SUMMER SESSION.** Graduate students who attend classes in the Summer Session must register both in the Graduate School and in the Summer Session; they must pay the tuition and fees listed in the *Announcement of the Summer Session*.

**SUMMER RESEARCH.** Students registered for Summer Research pay one-half of the General Fee for a registration period of not more than eight weeks and the full fee for a longer registration period unless they were regularly registered in the Graduate School during the previous academic year. For those students eligible for and desiring residence, a prorated tuition is charged in accordance with the fraction of a residence unit to be earned, based on the tuition in effect for the subsequent academic term.

**IN ABSENTIA.** A graduate student registered *in absentia* will pay a fee of \$35 each term.

## ADVANCED PROFESSIONAL DEGREES

Advanced professional degrees are designed as preparations and training for a special profession.<sup>4</sup> The admissions, requirements, and curricula for such degrees, as approved by the Graduate Faculty, are announced by the faculty of a professional school or college, which, for this purpose, acts as a Division of the Graduate Faculty. Degrees are awarded upon recommendation of the Division to the Graduate Faculty. Detailed information regarding admission or academic requirements for any professional degree is included in the *Announcement* of the separate school or college in which the degree is offered. Inquiries addressed to the Graduate School will be forwarded to the proper official. The professional degrees listed below are approved by the Graduate Faculty.

### AGRICULTURE

**MASTER OF AGRICULTURE (M.Agr.).** This degree is intended for professional agriculturists seeking opportunity to study in depth some subject or problem which is pertinent to their profession. Detailed information may be obtained from Director Herbert L. Everett, 192 Roberts Hall.

### ARCHITECTURE, FINE ARTS, CITY AND REGIONAL PLANNING

The following three degrees are administered by the Division of Architecture, Fine Arts, and Planning of the Graduate School. Inquiries should be addressed to the listed professor.

For more detailed information on these degrees, as well as those in architectural structures, architectural history, and art, see also the *Announcement of the Graduate School: Humanities*.

**MASTER OF ARCHITECTURE (M.Arch.).** Training in urban design. Only graduates of a five-year professional program in architecture or graduates of a program in city planning or landscape architecture are admitted as candidates. (Professor Colin Rowe.)

**MASTER OF FINE ARTS (M.F.A.).** Advanced training in the practice of painting, sculpture, or graphic arts. (Professor Jason Seley.)

4. The following are advanced degrees which are also first degrees of a school or college and therefore are not subject to the jurisdiction of the Graduate Faculty. For information regarding them, address the school or college indicated.

Master of Engineering (Aerospace)	.....	Graduate School of Aerospace Engineering
Master of Business Administration	{	Graduate School of Business and Public Administration
Master of Public Administration		
Doctor of Law	.....	Law School
Doctor of Medicine	.....	Medical College, New York City
Doctor of Veterinary Medicine	.....	Veterinary College

**MASTER OF REGIONAL PLANNING (M.R.P.).** Training for a professional career in the field of city planning or regional planning. (Professor Kermit C. Parsons.)

## COMMUNICATION ARTS

**Master of Communication Arts (M.C.A.).** The focus of this program is more on the *strategic application* of communication knowledge and technology, rather than on technical competence in media operation. The curriculum is designed for those students who wish to work with agencies in which organized public communication is a key concern. Emphasis is placed on three key elements: (1) analysis of what is known about the communication process, (2) exploration of the potential of current and new communication techniques and technology, and (3) application of the first two elements to specific communication problems.

## EDUCATION

Two professional degrees are administered by the Field of Education of the Graduate School. The programs leading to each of the degrees include courses, seminars, projects, and investigations which will develop the student's ability to perform acceptably the professional duties required of the several types of educational specialization.

**MASTER OF ARTS IN TEACHING (M.A.T.).** This program is designed for and limited to those preparing for teaching in elementary and secondary schools. The student and his Special Committee will select those courses and seminars in his teaching specialty and in Education which are deemed most appropriate for developing competence as a teacher. The student will be required to demonstrate his or her teaching skill in a supervised field experience. Completion of a twelve-month program, or two and two-fifths residence units is required. Graduates of a teacher-training program are not eligible for this degree.

**DOCTOR OF EDUCATION (Ed.D.).** The program for this degree is designed to prepare the candidate within a broad cultural context for positions of professional leadership in education. The program of studies must include advanced work in each of the following: educational psychology, history or philosophy of education, educational measurement and statistics, and research in education. At least fifteen hours of credit must be earned in courses other than those in professional education. A minimum of sixty-five credit hours beyond the Bachelor's degree is required, of which thirty-five hours should be completed beyond the Master's degree or its equivalent. A candidate is required to complete a minimum of five residence units beyond the Bachelor's degree and a year of directed field experience.



## Professional Teaching

**MASTER OF SCIENCE FOR TEACHERS (M.S.T.).** This is a co-ordinated program of training in the biological and physical sciences for practicing teachers. Each degree candidate must satisfy a broad core program in mathematics and science and complete advanced work in his selected Field of study. This degree is administered by the Division of Professional Teaching of the Graduate School. Detailed information may be obtained from the Graduate School Office, Sage Graduate Center.

## ENGINEERING

The degree of Master of Engineering is administered by the Engineering Division of the Graduate School. Specially oriented graduate programs of study are in the areas of agricultural, chemical, civil, electrical, industrial, materials, mechanical, and nuclear engineering, and in engineering physics. The following titles designate the professional Master's degrees offered in engineering: Master of Engineering (Agricultural), Master of Engineering (Chemical), Master of Engineering (Civil), Master of Engineering (Electrical), Master of Engineering (Engineering Physics), Master of Engineering (Industrial), Master of Engineering (Materials), Master of Engineering (Mechanical), Master of Engineering (Nuclear). The Graduate School of Aerospace Engineering administers the Master of Engineering (Aerospace) degree program.

The general requirements for the degrees listed above are:

1. A minimum of thirty credit hours of advanced technical course work in the specific field or in related subjects.
2. A minimum of three credit hours (included in the above) of engineering design experience involving individual effort and formal report.
3. A minimum grade point average of 2.5 and a minimum final grade of C minus for all courses counting toward the degree.

There are no residence requirements, although all course work must, in general, be completed under Cornell University staff instruction. The degree requirements must normally be completed within a period of four calendar years.

Graduates of Cornell University who hold Bachelor of Engineering degrees may be granted up to fifteen hours credit for advanced courses taken during their fifth undergraduate year, provided they enter the Master of Engineering program not later than the fall term following the sixth anniversary of their receiving the Bachelor of Engineering degree.

The *Announcement of the College of Engineering* should be consulted for further details on the professional Master's programs in the various fields.



## ENGLISH

**MASTER OF FINE ARTS (M.F.A.).** The degree of Master of Fine Arts in creative writing is designed to prepare candidates for careers in professional writing or in the teaching of creative writing. The program is administered by a specially appointed committee of the Department of English, acting as a Division of the Graduate School.

## INDUSTRIAL AND LABOR RELATIONS

**MASTER OF INDUSTRIAL AND LABOR RELATIONS (M.I.L.R.).** The four-semester program leading to this degree provides a basic course of graduate study for those with professional interests in industrial and labor relations and further provides limited opportunities for specialized professional study where broad competence has been established. This degree is administered by the Division of Industrial and Labor Relations of the Graduate School. More information may be obtained by writing to: Graduate Field Representative, School of Industrial and Labor Relations, Ives Hall.

## LAW

The following two degrees are administered by the Division of Law of the Graduate School. The *Announcement of the Law School* should be consulted for a complete description of the program and requirements.

**MASTER OF LAWS (LL.M.).** This degree is intended primarily for the student who desires to increase his knowledge of the law by working in a specialized field.

**DOCTOR OF THE SCIENCE OF LAWS (J.S.D.).** This degree is intended primarily for the student who desires to become a proficient scholar by original investigation into the functions, administration, history, and progress of law.

## MUSIC

The following two degrees are appropriate for mature composers who seek further professional training as well as knowledge of the other arts and humanities, both to enrich their creative perspectives and to prepare them for the teaching of composition and theory at the university level.

**MASTER OF FINE ARTS (M.F.A.)**

**DOCTOR OF MUSICAL ARTS (D.M.A.)**

These degrees are administered by the Department of Music, acting as a Division of the Graduate School for this purpose. More information may be obtained from Professor Robert M. Palmer, 218 Lincoln Hall.

## NUTRITIONAL AND FOOD SCIENCE

The following two degrees are administered by the faculty of the Graduate School of Nutrition acting as a division of the Graduate School. More information may be obtained by writing to: Secretary, Graduate School of Nutrition, Savage Hall.

**MASTER OF NUTRITIONAL SCIENCE (M.N.S.).** This program emphasizes fundamental study in the basic biological sciences that can lead to specialization in such areas as nutritional biochemistry, human and clinical nutrition, experimental or animal nutrition, and public health and international nutrition. The program is open to students who have had no previous course work in nutrition. For candidates interested in the biological sciences, the program serves as a valuable preliminary for graduate study for the Ph.D. degree in such areas as biochemistry and physiology, as well as human or animal nutrition.

**MASTER OF FOOD SCIENCE (M.F.S.).** The fundamental sciences, chemistry, biochemistry, and bacteriology, that are involved in food processing and utilization, are emphasized. Electives are available to meet individual needs in engineering, economics, marketing, business administration, and international programs. The specialized training serves as a preparation for technical work as related to the food industry or for more advanced graduate study.

The *Announcement of the Graduate School of Nutrition* should be consulted for further details on the professional Master's degree programs.

## THEATRE ARTS

**MASTER OF FINE ARTS (M.F.A.).** The degree of Master of Fine Arts in theatre arts is intended for students who wish to increase their professional competence as actors or directors through a studio-oriented program. It is administered by the Department of Theatre Arts, acting as a Division of the Graduate School for this purpose.

## VETERINARY MEDICINE

**DOCTOR OF SCIENCE IN VETERINARY MEDICINE (D.Sc. in V.M.).** This degree is characterized by a professional rather than a general research objective, and it is designed especially for experienced persons in the basic and clinical sciences who need more specific, advanced, scientific, and professional knowledge in order to equip themselves for careers in teaching and research. This degree is administered by the Division of Veterinary Medicine of the Graduate School.

## SPECIAL RESOURCES FOR RESEARCH AND ADVANCED STUDY

The descriptions below are limited to major general facilities at the service of graduate students in any of a variety of fields of instruction. In addition, substantial collections and facilities, in many instances unique, have been assembled for the use of graduate students. Although the facilities cannot be described adequately in this *Announcement*, some of them are mentioned in the statements given under the Fields of Instruction on pp. 53 ff.

### CORNELL UNIVERSITY LIBRARIES

The libraries are among the principal facilities in the University's program of graduate studies. The total number of volumes at Cornell is now over 3,000,000 and that figure increases by about 175,000 each year. For the convenience of students and faculty, the holdings are organized into a controlled system of distinct libraries. Some of the libraries are large; some have limited holdings. Some are general; some selective. Each library, whether within one of the colleges or housed in a building of its own, is situated where its books and its facilities lie most easily available to those who use them most. The libraries, whatever their nature, have been developed over many years by scholarly librarians and professors with the view of achieving breadth and depth in the central libraries, utility and coherence in the specialized ones.

The University's libraries offer support for graduate studies at several levels. They provide basic readings in virtually all subjects, collateral studies for classroom and seminar instruction, and highly specialized materials for advanced students. An unusually rich collection of reference works, both modern and antiquarian, expedites both the daily study and dissertational research. Of journals and periodicals, about 35,000 titles are available, most of them in complete runs, some of them in multiple copies, all of them immediately available. Special departments are maintained for maps, microtexts, documents, newspapers and other such collections.

To most graduate students, Olin Library, designed primarily as a research library, becomes the most familiar. Olin Library, completed in 1961, offers every modern library facility for its readers. The building is completely air-conditioned, scientifically lighted, comfortably furnished, and organized for efficient operation. It provides easy access to the book stacks, convenient photocopying facilities, and a comfortable lounge area for graduate students. Congestion is eliminated not only because of architectural design but also because undergraduates have their own open-stack library in a separate building. A graduate student whose work has advanced to the writing stage may apply for use of a carrel adjoining the book stacks in order to facilitate completion of his dissertation. Olin Library is open in term time from 8:00 A.M. to 12:00 P.M. weekdays, and from 1:00 P.M. to 12:00 P.M. Sundays.

Within Olin are a number of special collections likely to be of particular interest to advanced students of the social sciences and the humanities. The Department of Rare Books houses several distinguished collections, among them books and manuscripts relating to Dante, Petrarch, Wordsworth, Joyce, Shaw, and other literary figures. The Noyes Collection is rich in American historical documents, especially those pertaining to Lincoln and the Civil War. Students in the social sciences will also find extraordinarily interesting manuscripts and books in the collections of slavery and abolition, of witchcraft, of the French Revolution, and of the life and times of Lafayette. Long familiar to professional scholars are the Wason Collection on China and the Chinese, the Old Icelandic Collection, and collections on Japan and Southeast Asia. The History of Science Collections include the Adelman Library of Embryology and Anatomy, and the library of the French scientist, Lavoisier. The Collection of Regional History and Cornell University Archives is a manuscript depository with total holdings of more than 14,000,000 items. These manuscripts relate to all aspects of the economic, political, and social history of this region and the areas historically connected with it. Here, too, are the documents and manuscripts relevant to the founding and development of Cornell University. In addition to the collections in Olin Library, many of the college and department libraries also contain materials unique in their respective fields. Curators and reference librarians in all the libraries are available for counsel concerning the availability and use of research materials.

The University libraries in aggregate consist of Olin Library, as mentioned, Uris Library for undergraduates, the Physical Sciences Library, the Mann Library of Agriculture and Home Economics, and the libraries of the following colleges and schools: Fine Arts, Business and Public Administration, Engineering, Hotel Administration, Industrial and Labor Relations, Law, Medicine (in New York City), and Veterinary Medicine. Added to these are the libraries of academic divisions and departments, together with those of the Agricultural Experiment Station at Geneva, New York.

## INTERNATIONAL STUDIES PROGRAMS

### Center for International Studies

The Center for International Studies has as its primary function the coordination and support of the international activities of Cornell University. In addition to its role as a link between the activities of the specialized programs, the Center endeavors to facilitate and encourage research and teaching dealing with international affairs and to serve as a focal point for their discussion. The Center brings to Cornell visiting faculty, postdoctoral research fellows, and distinguished academic and professional personnel in the area of international affairs who give interdisciplinary courses and seminars. Through the use of the perma-

nent Cornell faculty, the Center is developing a teaching program at the undergraduate and graduate levels where it can usefully add to the regular offerings of separate schools and departments.

Students interested in foreign area studies or in international problems will find that the flexibility of both undergraduate and graduate requirements permits considerable latitude in selecting subjects. Appropriate courses of study can be selected from the regular offerings of various departments of the University. For example, in the College of Arts and Sciences the Department of Government offers instruction in comparative government, international relations, and international law and organization; in the Department of Economics there are offerings in international economics, economic development, and international trade. The College of Agriculture offers courses in the economics of agricultural development, international agriculture, and rural sociology. The School of Business and Public Administration offers courses in international development and comparative administration. The School of Industrial and Labor Relations offers courses in international and comparative labor relations.

The graduate student seeking specialized foreign-area knowledge may arrange a minor in one of the interdisciplinary area programs: Asian Studies or Latin American Studies. It is also possible to pursue an area interest in African Studies, European Studies, or Soviet Studies.

The continued growth of the international programs has been accompanied by the creation of an outstanding and comprehensive infrastructure of staff, library, language facilities, and other necessary resources.

The work of the Center and of associated programs and activities is more fully described in the Center's *Annual Report of International Studies at Cornell University* and the *Announcement of the Center for International Studies*. Further information may be obtained from the Center's office in 217 Rand Hall.

## African Studies

**ADVISORY FACULTY COMMITTEE ON AFRICAN STUDIES:** Thomas Poleman, chairman; Douglas Ashford, Harold Feldman, Milton Konvitz, Ian Macneil, Chandler Morse, Kathleen Rhodes.

Cornell University has substantial facilities for graduate study and research on Africa. Many members of the faculty in a variety of fields are qualified by research experience in Africa to provide instruction or guidance to students who wish to specialize in some aspect of African Studies, who plan to work there, or who are interested in a general or comparative knowledge of the area. Instruction and training in general linguistics are available for students expecting to deal with tribal peoples, and special courses on particular African languages (e.g., Ibo, Yoruba) have been given in recent years. Courses are regularly offered on the cultures and social systems of Africa and on the problems of economic, political and social development of the area. The University

libraries provide a good working collection of books, documents, maps, newspapers, and periodicals on Africa of sufficient scope to enable students and staff to carry on regional research. A representative group of African students is attracted to Cornell each year, most of whom are eager to discuss African life and problems with interested students from other areas.

Inquiries should be directed to: Professor Thomas Poleman, Chairman, Committee on African Studies, Warren Hall.

## China Program

**FACULTY:** Knight Biggerstaff, Nicholas C. Bodman, Nai-Ruenn Chen, Chuen-tang Chow, John C. H. Fei, Ta-Chung Liu, John McCoy, David Mozingo, Charles A. Peterson, Harold Shadick, Judith M. Treistman, Martie W. Young.

The China Program provides comprehensive graduate-level training and sponsors a wide range of research. The faculty represent the following fields: anthropology, economics, government, history, history of art, linguistics, and literature.

Graduate students in the program take a major in one of the fields listed above. They are expected at an early stage to attain sufficient mastery of the Chinese language to permit use of Chinese sources in their courses and seminars and in their research.

The focus of much of the research and teaching in the Program is the society, polity, economy, culture, and arts of modern and contemporary China. Students with this concentration are also expected to develop a general knowledge of traditional institutions and culture. Students majoring in history concentrate on medieval or modern China; no chronological limits apply to those in the history of art, linguistics, or literature.

The China Program supports three projects: political organization, social change, and personality development; economic development within a Chinese cultural setting; and linguistic studies in Southeast China and in the southwest border regions. Research Assistantships are available to advanced graduate students working in these areas, and occasionally in other fields as well. London-Cornell Studentships are open to advanced Ph.D. candidates in the social sciences and humanities who are in the China Program. They are tenable for study during an academic year at the London School of Economics and Political Science or at the School of Oriental and African Studies of the University of London. Stipends include air fares and tuition and fees.

London-Cornell Field Research Grants are open to Ph.D. candidates whose interests directly concern problems of social change in East Asia. Grantees may conduct dissertation research in any part of East Asia, and stipends for this purpose include travel and research expenses.

National Defense Foreign Language Fellowships and Foreign Area Training Fellowships are tenable in the Program. Graduate students

may also apply for other assistantships, fellowships, and scholarships offered by the University and by its departments.

Additional information on the Program and the various fellowships and awards may be obtained by writing to: Director, China Program, 100-A Franklin Hall.

## Program on Comparative Economic Development

The Program on Comparative Economic Development at Cornell University was founded in 1966 by a group of economists in the Department of Economics, the Department of Agricultural Economics, and the School of Industrial and Labor Relations. Its primary purpose is theoretical and empirical research into the causes and forces of economic development, emphasis being placed on the multiplicity and diversity of forms of the development phenomenon.

Several secondary benefits derive, or are expected to derive, from the activities of the Program. One is the educational feedback in the form of seminars, guest lecturers, and the availability of research scholarships to graduate students in the Department of Economics. Further, arrangements are being made for the establishment of regional research and educational centers in selected focal development countries.

The Program is not restricted to economists. On the contrary, it is hoped that as time goes on cooperation will be obtained from other fields. In fact, the philosophy of a wider basis of development science, not restricted to economics, is intended to become the central strength of the Program.

Additional information may be obtained by writing to: Professor Ta-Chung Liu, Director of the Program, Goldwin Smith Hall.

## International Agricultural Development Program

Cornell University provides unusual scope and facilities for graduate-level study and research concerning development of the critical agricultural sector of newly developing nations. An integrated program of research and graduate training is available in the various biological, physical, and social sciences fields which are relevant to agricultural development.

A student preparing for work in international agricultural development majors in a specific Field. In addition to basic preparation in that Field, he may minor in the Field of International Agricultural Development. The student may take courses which help him in applying his knowledge to the special conditions of newly developing nations, consult with experienced faculty members in regard to such application, and pursue a research project for his dissertation which is relevant to the special problems of newly developing countries. In much of this



work the program in agriculture draws upon the strong international programs in other colleges of the University, including the area study programs and the varied offerings in modern languages.

Faculty experience in overseas work is continuously developed through work in College of Agriculture overseas programs and individual consulting assignments. Several faculty members, who devote themselves full time to research and teaching in international agricultural development, have built special programs of research and continuing contact with particular geographic areas. The environment for the International Agricultural Development Program is further enhanced by more than 250 foreign graduate students majoring in the various fields of studies represented by the College of Agriculture.

Substantial expansion has recently taken place in the international program of several departments. Most departments have a number of assistantships and teaching fellowships designed to finance graduate students while they work closely with the teaching and research program in international agricultural development. Doctoral candidates in these departments, who are interested in international agricultural development, generally do field research in newly developing countries for their doctoral dissertations.

Additional information may be obtained by writing to: Professor K. L. Turk, Director, International Agricultural Development Program, 102 Roberts Hall.

## International Legal Studies Program

The Cornell Law School offers a program of concentrated study in international legal subjects. The full program is ordinarily pursued by J.D. candidates in their second and third years of regular law study, but all the courses in the Field are open to graduate students in law. Some of the courses are offered by visiting faculty members who come to the Law School under its program for distinguished foreign professors. A number of foreign scholars and students also come to Cornell for research and study in the comparative and international law fields. Other activities of the International Legal Studies Program have included faculty seminars in comparative law, summer conferences in public international law, and a program of speakers and seminars open to students. In addition, the Law School sponsors a small number of fellowships for foreign students to pursue graduate work in law.

For more detailed information, see the current *Announcement of the Law School*, the current *Annual Report of the Center for International Studies*, and the current *Announcement of the Center for International Studies*. Further information may be obtained by writing to: Professor Robert A. Anthony, Chairman, Graduate Study Committee, the Cornell Law School, or to the Director, Center for International Studies, 217 Rand Hall.



## Latin American Studies Program

**FACULTY:** Donald K. Freebairn, director; Charles Ackerman, Frederick B. Agard, Solon Barraclough, Jerome S. Bernstein, Dalai Brenes, Loy Crowder, David Davidson, Tom E. Davis, Martin Dominguez, Matthew Drosdoff, Charles L. Eastlack, Rose K. Goldsen, Thomas Gregor, Eldon Kenworthy, Anthony G. Lozano, Thomas F. Lynch, Robert E. McDowell, James O. Morris, John V. Murra, Thomas Poleman, Bernard Rosen, Donald F. Solá, J. Mayone Stycos, H. David Thurston, William W. Whyte, Lawrence K. Williams, Frank W. Young.

The Latin American Studies Program enables the graduate student to develop specialized competence in the history, culture, social organization, and language of Latin American countries. The student majoring in a relevant discipline can minor in Latin American Studies.

Forty courses directly pertaining to Latin America are offered by the Departments of Agricultural Economics, Agronomy, Animal Science, Anthropology, Economics, Government, History, Housing and Design, Industrial and Labor Relations, Romance Studies, Rural Sociology, and Sociology. The courses constitute the basis for formulating programs leading to a graduate *minor* in Latin American Studies. Normally, five or six semester-long offerings satisfy the formal course requirements. In addition, the degree candidate minoring in Latin American Studies must exhibit proficiency in reading and speaking either Spanish or Portuguese.

Applications for scholarships, fellowships, or teaching fellowships should be made to the department in which the student is taking his major. Students minoring in Latin American Studies qualify for NDEA Title VI Modern Language Fellowships. Application forms may be obtained from the Graduate School.

Summer research travel grants and support for on-campus course work during the summer are available to selected graduate students through the Latin American Studies Program. Although thesis research may be supported by the Program, support should first be sought from the Foreign Area Training Fellowship Program, the Social Science Research Council, Fulbright-Hays, the Doherty Foundation, and the Organization of American States.

Because of the considerable volume of research on Latin America currently being carried out by Cornell faculty members, students will normally be afforded the opportunity of participating in ongoing projects while in residence and will generally be expected to do field work in Latin America at some stage of their graduate training. Major research projects are under way in the fields of Andean community development, comparative economic development, fertility and population, descriptive linguistics, and urbanization.

Additional information may be obtained by writing to: Donald K. Freebairn, Director, Latin American Program, Rand Hall.

## Near Eastern Studies

ADVISORY FACULTY COMMITTEE ON NEAR EASTERN STUDY: Isaac Rabinowitz, chairman; A. Henry Detweiler, Alfred E. Kahn.

Students wishing to relate the work of their major or minor subjects to Near Eastern area or language studies should seek advice or information from the Faculty Committee on Near Eastern Studies. In a number of fields, the University's resources for specialized graduate study and research on countries of the Near East are of considerable value. Members of the Committee can provide suggestions regarding relevant courses in various subjects, assistance in planning research on the Near East, and guidance in applying for area training or research fellowships. Inquiries should be addressed to: Professor Isaac Rabinowitz, Chairman, Department of Semitic Languages and Literatures, 173 Goldwin Smith Hall.

## South Asia Program

(Bhutan, Ceylon, India, Nepal, Pakistan, Sikkim)

STAFF: Gerald Kelley, director; Messrs. Douglas E. Ashford, Harold R. Capener, Arch T. Dotson, Gordon H. Fairbanks, Harold Feldman, James Gair, Leighton W. Hazlehurst, Michael Hugo-Brunt, Kenneth A. R. Kennedy, John W. Mellor, Stanley J. O'Connor, Morris E. Opler.

The increasing importance of the peoples of the Indian subcontinent and of the role they play in world affairs enhances the need for providing opportunities in America for training and research in the field of Indic studies. The South Asia Program at Cornell, dealing primarily with India, Pakistan, Ceylon, and Nepal, is organized and equipped to help meet this need. Since 1948 it has sponsored a series of research projects on India and Ceylon, and it has trained a distinguished group of younger American and South Asian scholars in South Asian area and language studies. The Program faculty includes members from agricultural economics, anthropology, government, history of art, human development and family studies, business and public administration, rural sociology, city and regional planning, and languages and linguistics. Sanskrit, Pali, Hindi, Urdu, Telugu, and Sinhalese are languages regularly offered at Cornell. Cornell participates in the interuniversity summer program which provides instruction in other South Asian languages and selected social sciences and humanities disciplines each summer on the campus of a member eastern university.

Qualified graduate students interested in specializing in the study of South Asia minor in Asian Studies with concentration on South Asia, in South Asian art history, or in South Asian linguistics. The doctoral candidate must have a reading knowledge of Hindi or, depending upon the subarea of his specialization, some other important language of South Asia.

## RESEARCH AND FIELD TRAINING

The doctoral dissertations of students in the South Asia Program are normally based on research done in India, Pakistan, Ceylon, or Nepal. Students' field research may benefit from advice and guidance in the field by a program staff member. At least one member of the faculty of the South Asia Program has been in South Asia for each of the last several years. Cornell is a charter member of the American Institute of Indian Studies, which was organized to facilitate study and research in India by American advanced students and by faculty specializing in various aspects of Indian civilization and contemporary affairs. The University also maintains close links with a number of research agencies, programs, and institutions of higher learning, such as the Deccan College Postgraduate Research Centre, Delhi University, Osmania University (Hyderabad), and universities in Ceylon. Staff members of these institutions have provided valuable assistance to Cornell students working in India. There are opportunities for graduate students to become associated with Cornell-sponsored research in South Asia or to carry on independent research abroad. Every effort is made by the Program staff to aid qualified students to obtain financial support for a field training or research project in one of the countries of the area.

Research interests under the South Asia Program are focused largely on recent or contemporary developmental problems of the countries of the area—on changes taking place in the economic, political, social, religious, artistic, and intellectual life of the region. A long-term research project in progress in India is primarily concerned with the ramifying problems of introducing technological changes and the influence of such changes when adopted. For this research program, faculty and students in anthropology have carried on, since 1949, an extended and varied series of rural and urban community studies in several different regions of India from the Deccan into the Himalayan foothills. A major related project, the Cornell International Agricultural Development Program, which is supported by Ford Foundation funds, is concerned with the development of the entire agricultural sector of the Indian economy. With Ford Foundation support, Cornell is assisting Delhi University to become a major center in the field of linguistics. At the same time, other studies in urban renewal and regional planning, public administration, the role of government in cultural change, and recent movements in the arts and in religions and ideologies are in progress under faculty direction. Cornell is also making a special study of the Sinhalese language and of linguistic problems of Ceylon, a nation so far much neglected by American scholars. Research is also under way on Oriya and Telugu, important regional languages of India. The new nations of South Asia present so many problems for study that the areas of inquiry open to students and staff members are limited only by availability of research means.

## FELLOWSHIPS AND ASSISTANTSHIPS

Fellowship and assistantship awards are available to qualified graduate students minoring in Asian Studies with a concentration on South Asia.

The South Asia Program fellowships are open to incoming graduate students with South Asia interests, and should be applied for by writing to: Director, South Asia Program, 221 Morrill Hall. These fellowships are normally given to provide supplementary support for student research projects, at Cornell or in the field. Students in the South Asia Program are also eligible for assistantships in their major discipline departments, for fellowships and scholarships offered by the Cornell Graduate School, for National Defense Foreign Language Fellowships, and for Foreign Area Training Fellowships. Additional information on financial aid may be obtained by writing to the director, at the address given above.

## Southeast Asia Program

**FACULTY:** John M. Allison, Benedict R. Anderson, Arch T. Dotson, John M. Echols, Frank H. Golay, Alexander B. Griswold, D. G. E. Hall, Robert B. Jones, Jr., George McT. Kahin, Stanley J. O'Connor, Robert A. Polson, Robert M. Quinn, Lauriston Sharp, James T. Siegel, John U. Wolff, O. W. Wolters.

The Southeast Asia Program possesses substantial facilities for study and research on the graduate level and provides exceptional opportunities for general or specialized work on all of Southeast Asia in various disciplines of the humanities, social sciences, and some natural sciences, as well as in interdisciplinary area seminars. Instruction in the major languages of the area is an integral part of the graduate training of the Southeast Asia Program. Much basic and pioneering research remains to be done in this area, and the Southeast Asia Program is organized and equipped to help meet such needs.

Special intensive instruction in Southeast Asian languages is available during summer sessions. Entering graduate students intending to study one of these languages are encouraged to begin such study during the summer preceding registration in the Graduate School. Inquiries should be made as early as possible to the director of the Southeast Asia Program.

Southeast Asia Program fellowships are available on a competitive basis to graduate students. They carry stipends of up to \$3,200 plus tuition and General Fee, and are available only to qualified candidates for advanced degrees at Cornell. Competition for these awards is open to citizens of the United States or Canada, nationals of Southeast Asian countries, and, in exceptional cases, nationals of other countries.

The fellowships are available to applicants who are able to demonstrate a serious scholarly interest in Southeast Asian studies; who show the greatest promise of becoming qualified regional experts with specialization in a relevant discipline of the humanities, social sciences, or certain natural sciences; and who are admitted to the Cornell Graduate School for advanced work in such a discipline. Previous experience in Southeast Asia or in the study of that area is not necessarily required. It is important that the applicant be able to show that advanced work

in a major subject offered at Cornell, combined with work in the Southeast Asia Program, will make his future professional activities more effective; this requirement is particularly important for a student in the natural sciences.

Fellowships are normally awarded for one academic year. If the student's work during the first year has been of high caliber, reappointment is sometimes possible. In such cases, formal reapplication is expected from the student. The primary purpose of these awards is to encourage graduate students to acquire a substantial knowledge of Southeast Asia while majoring in one of the discipline fields of the Graduate School. Accordingly, they are usually offered only to students who take a minor in Asian Studies and participate fully in the Southeast Asia Program. The recipient of a fellowship may be asked to devote up to six hours a week under faculty supervision to work connected with the Program.

London-Cornell Studentships are available for advanced Ph.D. candidates in the social sciences and the humanities who have already had at least one year of resident study in the Southeast Asia Program. These fellowships are tenable for study during an academic year at the School of Economics and Political Science or the School of Oriental and African Studies in the University of London. Stipends range up to \$3,000 plus air fares and tuition and fees. London-Cornell Field Research Grants are open to Southeast Asia Program Ph.D. candidates in the social sciences and humanities after they have had appropriate training at Cornell, or at Cornell and London. They are tenable for up to twenty-two months for the purpose of dissertation research. Recipients of London-Cornell Field Research Grants may conduct research in any part of Southeast Asia. Stipends range up to \$12,000 for twenty-two months including travel and research expenses.

Cornell-Philippines Field Research Fellowships are available, under a grant from the Rockefeller Foundation, for advanced graduate students who plan to write dissertations in the social sciences or the humanities, based upon field research in the Philippines. Fellowship support is for ten to fifteen months in the Philippines and includes living costs, local transport, and roundtrip transportation from the United States for the graduate student and dependent wife or husband.

National Defense Foreign Language Fellowships, Title VI, are offered by the United States Office of Education for study during the academic year, the summer, or both. Application should be made to Sage Graduate Center, Cornell University. Information about Foreign Area Training Fellowships, administered by the Social Science Research Council, may be obtained by writing to the Foreign Area Fellowships Program, 444 Madison Avenue, New York, New York 10022. Graduate students may also apply for other fellowships, teaching fellowships, assistantships, and scholarships offered by the University and its departments.

Additional information on the Program and the various fellowships and awards may be obtained by writing to: Director, Southeast Asia Program, 108 Franklin Hall.

## Soviet Studies

COMMITTEE ON SOVIET STUDIES: George Gibian, chairman; Urie Bronfenbrenner, M. Gardner Clark, Walter Galenson, Richard Leed, Walter Pintner, Myron Rush, George Staller.

OTHER FACULTY MEMBERS IN SOVIET STUDIES: Patricia Carden, Frederick Foos, Antonia Glasse, Boris Glasse, Martin Horwitz, Augusta Jaryc, Alla Novosilzova, Hugh Olmstead, Nicholas Troizkij, Marla Wykoff.

The University offers a number of courses and seminars on the Soviet Union as well as pre-1917 Russia. Instead of a separate area program, graduate students have a choice of majors and minors in the established Fields of the Graduate School. Some of the subjects focus on area specialization: Russian history, Russian literature, Slavic linguistics. Other subjects combine area specialization with a nonarea framework: comparative government, economic planning, regional planning, social psychology.

Graduate students pursuing Soviet Studies in any of these subjects are expected to attain proficiency in the Russian language either before entering the Graduate School or soon thereafter.

The University's academic activities related to Russia are coordinated by the Committee on Soviet Studies. The Committee also sponsors a colloquium for faculty members and graduate students in Soviet Studies. In the Soviet Studies Graduate Study in the John M. Olin Library, major reference works and key current periodicals from and about the U.S.S.R. are brought together.

The Committee on Soviet Studies selects a limited number of graduate students each year as research assistants. The Russian section of the Division of Modern Languages and the Department of Russian Literature also appoint several graduate students annually as teaching fellows in the Russian language. For other teaching fellowships, fellowships and scholarships, students apply directly to the Graduate School or to the department concerned. NEA Title IV and Title VI Fellowships are available in various subjects.

## FACULTY SPECIALIZATIONS

ECONOMICS: M. Gardner Clark, Walter Galenson, George J. Staller

HISTORY: Walter M. Pintner

LANGUAGES AND LINGUISTICS: Frederick Foos, Boris Glasse, Richard Leed, Mrs. Augusta Jaryc, Alla Novosilzova, Hugh Olmsted, Marla Wykoff

LITERATURE: Miss Patricia Carden, George Gibian, Miss Antonia Glasse, Martin Horwitz, Hugh Olmsted

POLITICAL SCIENCE: Myron Rush

PSYCHOLOGY: Urie Bronfenbrenner

Inquiries about fellowships and other aspects of Soviet Studies should be addressed to: Professor George Gibian, Chairman, Committee on Soviet Studies, Goldwin Smith Hall.

## OTHER PROGRAMS AND STUDIES

### American Studies

COMMITTEE ON AMERICAN STUDIES: S. Cushing Strout, chairman; Archie R. Ammons, LeGrace G. Benson, Jonathan P. Bishop, Stuart M. Brown, Jr., Douglas F. Dowd, Robert H. Elias, Robert T. Farrell, Heywood Fleisig, Paul W. Gates, Rose K. Goldsen, Andrew Hacker, Baxter L. Hathaway, Richard I. Hofferbert, Michael G. Kammen, Michael Kaufman, Walter LaFeber, Thomas W. Leavitt, John E. Martin, James H. Matlack, Dan E. McCall, James R. McConkey, Andrew J. Milnor, Arthur M. Mizener, Richard Polenber, Albert S. Roe, Clinton Rossiter, Joel H. Silbey, Walter J. Slatoff, James M. Smith, Fred Somkin, Gordon F. Streib, Robin M. Williams, Jr.

Although there is no formal program leading to a degree in American Studies, candidates for the doctorate in English and history will find ample opportunity to do interdisciplinary work in conjunction with a major in American Studies within their field. There are members of the staff in both fields who are professionally trained and currently active in the study of the interrelationships of American intellectual, literary, and social history, so that a student concentrating in American literature or American history may take advantage of the freedom permitted by Graduate School regulations and, in collaboration with his Special Committee, readily build an individual doctoral program that systematically embraces more than a single discipline. Inquiries concerning opportunities in this area should be addressed to: Professor S. Cushing Strout, Chairman, American Studies Committee, Goldwin Smith Hall.

### Brookhaven National Laboratory

Cornell is one of nine eastern universities participating in Associated Universities, Inc. (AUI). Operating under contract with the Atomic Energy Commission, this corporation has the responsibility for the management of Brookhaven National Laboratory. The Laboratory provides unusual research facilities for studies in biology, chemistry, applied mathematics, medicine, physics, high energy particle physics, and reactor and nuclear engineering.

Graduate students may participate in research at Brookhaven by association with Cornell staff members who are engaged in research at the Laboratory. Members of a variety of science departments at Cornell are currently involved in programs at Brookhaven. The Laboratory also offers temporary summer appointments to a limited number of selected graduate and undergraduate students in science or engineering.

### Center for Environmental Quality Management

The Center for Environmental Quality Management brings together the faculties of the Cornell Medical College in New York and the various



colleges and schools in Ithaca to study the manifold questions of environmental health in both urban and rural settings.

Current approaches to the modification and control of the environment, in concentrating on limited objectives such as air quality control, disease control, water quality control, pest control, food sanitation, occupational health, etc., have had limited success since they have been unable to take into account the interdependence of environmental health problems. The character and the urgency of the total environmental quality problem facing us appears insoluble short of an overall approach that will enable decision makers to consider simultaneously the significant variables and relationships relevant to the management of environmental quality.

Scientific management through systems analysis has begun to make it possible to consider these multiple relationships within the framework of common objectives and subject to predetermined constraints. It provides mechanisms by which various innovations can be examined in terms of their short and long-term effects upon the environment. Such an approach provides rational bases for establishing environmental quality goals and for the allocation of scarce resources to achieve these goals.

The Center is frequently able to provide predoctoral and post-doctoral fellowships for students interested in pursuing research topics in environmental health. For information regarding specific programs, write to: Professor Walter R. Lynn, Director, Center for Environmental Quality Management, 302 Hollister Hall.

## Center for Housing and Environmental Studies

The purposes of the Center for Housing and Environmental Studies are to aid and guide basic research in the field of man's shelter and environment, to facilitate graduate study, and to aid the flow of information among colleges and departments and between the University and sources of information off campus. A small central staff assists in the initiation and conduct of projects.

The facilities of the Center for Housing and Environmental Studies are available to faculty members and graduate students in all Fields. Through the Center, students who cut across traditional lines of research may draw upon the knowledge and experience of specialists in such various subject areas as design, materials, equipment, structural methods, environment, family living, economics and finance, government, and health. The Director of the Center is Professor Glenn H. Beyer, West Sibley Hall.

The Division of Urban Studies of the Center has a broad range of research projects, with concentration in the areas of regional development, planning and heuristic gaming; and also has several publication series. The Division is under the direction of Professor Barclay G. Jones, associate director for urban studies.



## Center for Radiophysics and Space Research

The Center for Radiophysics and Space Research unites research and graduate education carried on by several academic departments in the space sciences. It furnishes administrative support and provides facilities for faculty members and graduate assistants who are engaged in space research activities, and it offers opportunity for graduate students to undertake thesis work leading to the degrees of Master of Science and Doctor of Philosophy. A student's major professor can be chosen from the following Fields in the Graduate School: Aerospace Engineering, Applied Physics, Astronomy and Space Sciences, Chemistry, Electrical Engineering, Physics.

Thesis research in the following areas is now possible:

(a) Astronomy and astrophysics. Astronomical aspects of cosmic rays, gamma-radiation, x rays, neutrinos; cosmology; experimental studies and theory relating to the surface of the moon and the planets; processes in the interstellar gas; solar-system magnetohydrodynamics; stellar statistics; theory of stellar structure, stellar evolution, nuclear processes in stars.

(b) Atmospheric and ionospheric radio investigations. Dynamics of the atmosphere; incoherent electron scattering; study of refraction, scattering, attenuation due to the inhomogeneous nature of the troposphere and ionosphere; theory and observation of propagation of radio waves in ionized media such as the ionosphere.

(c) Radar and radio astronomy. Distribution and classification of radio sources; radar investigations of the moon and planets; solar radio observations; studies of gaseous nebulae.

(d) Space vehicle instrumentation. Instrumentation relating to lunar exploration; magnetic field measurements; tenuous gas and particle flux measurements; infrared observations from rockets.

The facilities of the Center include the lunar surface and electronics laboratory on the Cornell campus, the radio astronomy and ionospheric laboratories close to Ithaca, and the Arecibo Ionospheric Observatory in Puerto Rico. At Arecibo an extremely sensitive radio telescope and an unusually powerful space radar are available for use by qualified graduate students. In addition, certain facilities of Sydney University, Australia, are available through the Cornell-Sydney University Astronomy Center (see p. 46).

## Center for Research in Education

The Center for Research in Education provides an institutional focus within the University for the interests of faculty members from different disciplines in educational research and development. In addition, the Center attempts to stimulate investigation of socially significant educational problems and to train students in educational research. At present, research projects in adult-child interaction and cognitive socialization, in language development and literacy, in science education, and in early school learning are under way. Research programs in mathematics education and in undergraduate education are being planned.

The Center provides predoctoral and postdoctoral training through research assistantships, training grants, and postdoctoral fellowships. For information write to: Professor Alfred L. Baldwin, Director, Center for Research in Education, Rand Hall.

## Cornell-Sydney University Astronomy Center

The Center is an interuniversity organization designed to create a larger pool of facilities and skills for research in astronomy and related fields than would be separately available to either university. Graduate students can be interchanged between the two institutions whenever appropriate for the research work in which they are engaged. Both universities recognize research supervision extended by the sister university, and the time spent by a student on thesis work in the sister university can be accepted toward residence requirements with the proviso that the approval of the home research supervisor is given and also that the home university bylaws are not contravened.

The facilities available through the Center, in addition to those of Cornell's Center for Radiophysics and Space Research, are the one-mile by one-mile Mills Cross situated at Hoskinstown, New South Wales; the stellar intensity interferometer situated at Narrabri, New South Wales; the Criss-Cross, the Shain Cross, and Mills Cross situated at Fleurs, New South Wales; the Wills Plasma Physics Department, the Basser Computing Department, the Falkner Nuclear Department, and the facilities of the cosmic ray group at the University of Sydney. The Center includes H. Messel, R. Hanbury Brown, W. N. Christiansen, C. B. A. McCusker, and B. Y. Mills from the University of Sydney faculty.

Further information can be obtained from: Professor T. Gold, Joint Director, Cornell-Sydney University Astronomy Center, Space Science Building, Cornell University.

## Developmental Studies

Specialization in this area normally involves participation in a program jointly sponsored by the Fields of Human Development and Family Studies, and Psychology. The program presently emphasizes cognitive development. Students interested in the program should apply to either the Field of Human Development and Family Studies or Psychology. Training in research skills in both Fields is recommended. Students admitted to the program fulfill the requirements of whichever Field they enter. Current research interests of the faculty include development of language, perception, thinking, intellectual development in natural settings, conceptual and affective behavior in infancy, cognitive socialization, and biological maturation. For further information see the description of the Fields of Psychology, and Human Development and Family Studies, or write to either Field Representative.

## Division of Biological Sciences

The Division of Biological Sciences was established in 1964 to bring together into a single administrative unit a number of investigators and teachers representing a broad spectrum of interests in basic biology. Its members hold appointments in one or more of four schools and colleges but serve the University as a whole through the Division. The Division is responsible for all the undergraduate teaching of biology, including the establishment of requirements for the major in its various branches. It also has the primary responsibility for the promotion of research in basic biology, and its members engage in graduate teaching through participation in appropriate Fields in the Graduate School Faculty. At present the following subject areas are represented by separate sections of the Division: biochemistry and molecular biology; ecology and systematics; genetics, development, and physiology; microbiology; and neurobiology and behavior. A number of graduate fellowships, teaching fellowships, research assistantships, and traineeships are available through the Division. For further information, write to Professor Robert Morison, 201 Roberts Hall.

## Materials Science Center

The Materials Science Center (MSC) at Cornell is an interdisciplinary laboratory created to promote research and graduate student training in all phases of the science of materials. The subjects of study represented in the MSC program are applied physics, chemistry, electrical engineering, materials engineering, materials science, mechanics, metallurgy, and physics.

The extent of the benefits a graduate student may derive from the MSC program depends on the actual research he pursues. If the student chooses to follow the more conventional course of becoming a specialist in one specific area, the MSC program could help him by providing new equipment, financial assistance through research assistantships, or, in some cases, the help of a technician to carry out routine measurements.

If the student wishes to follow a program of considerably more breadth than usual in his research training, the MSC program provides an additional advantage. Several central facilities have been set up where more specialized apparatus such as crystal-growing furnaces, high-pressure equipment, x-ray and metallography equipment, electron microscopes, etc., are available to all MSC members and their students. In addition to the equipment, expert advice on its use and the interpretation of the results will be available. In these central facilities, it is expected that the student will come in contact with students from other disciplines, resulting in a mutually profitable interaction.

The Office of the Director of the Materials Science Center, Professor R. E. Hughes, is in Room 627, Clark Hall.

## Military Science, Naval Science, and Aerospace Studies

### (ROTC, NROTC, and AFROTC)

The advanced course in military science (Army ROTC), naval science (Naval ROTC), and aerospace studies (Air Force ROTC) is open to graduate students who have satisfactorily completed a basic course in ROTC or who enroll in a two-year ROTC program. Successful completion of the two-year advanced ROTC course will qualify a graduate student for appointment as a second lieutenant in the United States Army, Air Force, or Marine Corps Reserve; or ensign, United States Naval Reserve; or as second lieutenant in the Regular Army or Air Force. Interested graduate students should consult the *Announcement of Officer Education* and apply to: Professor of Military Science, Professor of Naval Science, or Professor of Aerospace Studies (ROTC), Barton Hall.

## Plasma Physics

Established in 1966, the Laboratory for Plasma Studies at Cornell enables students and faculty members to deal with plasma, electron, and laser physics on a unique, interdisciplinary basis. In the future, plasmas will provide power for our cities, will power spacecraft, will help us to explain the composition of the universe, and may unlock the energy resources of the sea. Nothing less than an integrated scientific and technological approach to these and other vital areas of plasma research is feasible.

The unified, interdisciplinary approach to plasma studies has added a new dimension to education at Cornell enabling the University to give the best counsel to graduate students who want to combine their knowledge of some field of science or engineering with work in plasma studies. A program now exists whereby graduate study in plasma physics is offered to students in aerospace engineering, applied physics, chemistry, electrical engineering, mechanical engineering, and physics.

Graduate research assistantships are available through the Cornell Laboratory for Plasma Studies as well as from several departments within the University. It is also possible to obtain positions as postdoctoral research associates with the Laboratory. Prospective graduate students should also consider applying for fellowships awarded on a national basis by the Atomic Energy Commission and the National Science Foundation. The deadlines for these programs are usually in the fall for the following academic year. For further information, write to: Professor Peter L. Auer, Director, Laboratory for Plasma Studies, Upson Hall.

## Statistics Center

The methods of statistics find important applications in many diverse fields of research. It is therefore necessary that (1) subject matter spe-

cialists be able to obtain assistance in using or developing statistical theory, (2) students who intend to do research work in a particular field which makes extensive use of statistical methods receive adequate training in statistics, and (3) individuals be trained as statisticians.

The staff members of the various schools and colleges of Cornell University who are interested in the development and application of statistical methods are associated with the Cornell Statistics Center. A major responsibility of the Center is to provide a focal point to which individuals, projects, and departments may come to receive assistance and guidance with respect to the statistical aspects of research and training programs.

The acting director of the Center is Professor Philip J. McCarthy, Ives Hall.

## Center for Water Resources and Marine Sciences

The Center is an interdisciplinary organization serving the entire University at the graduate study and research level. Its purpose is to promote and coordinate a comprehensive program in water resources planning, development, and management in such areas as the sciences, engineering, agriculture, law, economics, government, regional planning, and public health.

Its responsibilities are to undertake water resources research in engineering, in the physical, biological, and social sciences, and in the humanities; to encourage and contribute to graduate studies in water resources; to coordinate research and training activities in water resources; to encourage new combinations of disciplines in research and training which can be brought to bear on water resource problems; to disseminate the results of research; and to develop and operate central facilities which may be needed to serve participants in research and training.

Correspondence concerning the Center should be directed to: Professor L. B. Dworsky, Director, Center for Water Resources and Marine Sciences, Hollister Hall.

Correspondence related to graduate study in the Field of Water Resources should be directed to: Field Representative, Professor C. D. Gates, Hollister Hall.

## SPECIAL FACILITIES AND SERVICE ORGANIZATIONS

### New York State Agricultural Experiment Station at Geneva

The New York State Agricultural Experiment Station was established in 1880 to promote agriculture through scientific investigations and experimentation. It is located at Geneva, fifty miles from Ithaca, and has been under the administration of Cornell University since 1923.

Professors on the Geneva staff are eligible to serve as members of the Special Committees of graduate students along with professors on the Ithaca campus of the University. Normally the graduate training provided at Geneva consists of research experience and supervision of the student's work on a thesis problem. The formal course work of the student's training program is given on the Ithaca campus. Students who plan to do part of their graduate work at Geneva should correspond with their major advisers or with the dean of the Graduate School concerning regulations as to residence, Special Committees, etc.

The Station is equipped to care for graduate students in certain specific lines of research, viz., chemistry, economic entomology, food technology, microbiology, plant pathology, pomology, seed investigations, and vegetable crops. Ample facilities are available for graduate research under laboratory, greenhouse, pilot plant, insectary, orchard, and other field conditions.

Certain phases of the investigations now being conducted at the Station and other problems for which the facilities of the Station are suitable may be used as thesis problems by graduate students.

The director is Professor D. W. Barton, who may be addressed at the New York State Agricultural Experiment Station, Geneva, N. Y. 14456.

## Office of Computer Services

The principal computing facility at Cornell is an IBM 360 Model 65 located at Langmuir Laboratory at the Cornell Research Park. The system is equipped for remote access of several kinds, and the operating system is designed so that very few users find it necessary to visit Langmuir. The primary terminals are high-speed reader-printers located in Upson, Clark, and Warren Halls. While these are remote job-entry and delivery devices rather than conversational terminals, they permit convenient access, job turnaround-time in terms of minutes, and the use of on-line files. Each of these terminals is the core of a small computing center, with auxiliary equipment, consulting assistance, reference material, and work space. In addition to these high-speed terminals, teletypewriter terminals are available to individual projects that require interactive capability.

Two IBM 1800 computers that control various real-time laboratory devices are also linked directly to the 360/65. These machines provide graphical input-output capability and an analog-digital interface.

This computing system is busy but not saturated, and use by graduate students is encouraged.

The Office of Computer Services is responsible for the operation of this system and for the provision of consulting and programming assistance. The Office cooperates with the Department of Computer Science in providing courses in programming and computing techniques. Both organizations employ a number of graduate students on assistantships and part-time appointments for this work.

For further information write to the Office of Computer Services, Langmuir Laboratory.

## University Press

Cornell University Press, founded by Andrew D. White in 1869, was the first university press in America and is among the leaders in number of volumes published annually. The Press publishes scholarly books on nearly every academic subject, serious nonfiction of general interest, and advanced or experimental textbooks for universities. The imprint of Comstock Publishing Associates, a division of the Press, is placed on certain books in the biological sciences. The Press also publishes a paperbound series, Cornell Paperbacks. More than 20 percent of the books published by the Press in recent years were written by members of the Cornell University faculty. All printing for the Press is done under contract by various book manufacturing firms; the Press has no production facilities of its own.

## Visual Aids

The University owns and operates the Photo Science Studios, which create or cooperate in the creation of photographic studies and visual aids of all kinds.

The extension services of the New York State Colleges, which form integral parts of the University, disseminate knowledge through an intensive program of publication, photography, and recording supervised by professional staffs. Materials produced by graduate students may find outlets through these channels.

## Other Research Units

Some other research units allied with the University, either as wholly owned and operated divisions or as wholly or partially autonomous organizations with which the University has a working agreement, are the Sloan-Kettering Cancer Research Institute in New York City, through the Graduate School of Medical Sciences, and the Veterinary Virus Research Institute in Ithaca.

Cornell is also one of fourteen founding members of the University Corporation for Atmospheric Research which, under National Science Foundation support, operates the National Center for Atmospheric Research at Boulder, Colorado. In addition to Brookhaven National Laboratory, Cornell, as a member of Associated Universities, Inc., has access to the facilities of the National Radio Astronomy Observatory in Greenbank, West Virginia.

Further opportunities for formal study, field work, and independent research by Cornell graduate students are available in many institutions, laboratories, and libraries both in the United States and in other countries. For example, the Cornell-Harvard Archaeological Exploration at Sardis, Turkey, and the Museum of Northern Arizona at Flagstaff, Arizona, both provide opportunities for field research related to doctoral work of Cornell graduate students. Information on that kind of arrangement is available directly from the Field Representatives.



## GRADUATE SCHOOL OF MEDICAL SCIENCES

The opportunity for graduate work leading to advanced general degrees was first offered in the Medical College in 1912 in cooperation with the Graduate School of Cornell University. In June 1950, the trustees of Cornell University entered into an agreement with the Sloan-Kettering Institute for Cancer Research whereby a new division of the Medical College, namely, the Sloan-Kettering Division, was created for the purpose of offering additional opportunities for graduate study toward advanced degrees, thus extending the areas of the basic sciences.

That expansion of the New York City component of the Graduate School resulted in the establishment in January 1952, of the Graduate School of Medical Sciences which, with the approval of the faculty of the Graduate School of Cornell University, was given the full responsibility for administrative matters related to the advanced general degrees granted for study in residence at the New York City campus of Cornell University.

**DEGREES.** The general degrees of Ph.D. and M.S. are awarded for advanced study and scholarly, independent research in the fields of anatomy, biochemistry, biomathematics, biophysics, biostatistics, cell biology, genetics, microbiology, neurobiology and behavior, pharmacology, and physiology.

**FACILITIES.** The facilities for graduate work at the Graduate School of Medical Sciences include those of the Medical College and of the Sloan-Kettering Division. The five buildings of the Medical College, extending along York Avenue from Sixty-eighth to Seventieth Street in New York City, contain the lecture rooms, student laboratories, library, and research facilities for graduate and undergraduate work. The Sloan-Kettering Division is located in the Sloan-Kettering Institute and the Kettering Laboratory on East Sixty-eighth Street in New York City, and in the Walker Laboratory in Rye, New York. The special facilities and experienced investigators of the Sloan-Kettering Division offer ample opportunity for advanced graduate work in the basic science aspects of research related to cancer and allied diseases.

**FINANCIAL ASSISTANCE.** Predoctoral fellowships are available to qualified applicants. The fellowships may be renewed yearly providing the academic performance of the fellowship holders is satisfactory. Teaching fellowships and research assistantships are available to qualified graduate students in some departments of the Medical College. In addition to a stipend, the costs of tuition and fees are defrayed for those students receiving financial assistance.

**FURTHER INFORMATION.** Information on financial assistance and the entire program of the Graduate School of Medical Sciences is provided in the *Announcement of the Graduate School of Medical Sciences*. Requests for that Announcement should be addressed to the Graduate School of Medical Sciences, Cornell University, Medical College, 1300 York Avenue, New York 10021.



## FIELDS OF INSTRUCTION

**REPRESENTATIVES.** Since instruction in the Graduate School is primarily individual, those interested in becoming students are encouraged to communicate with individual members of the faculty with whom they may want to study. Personal interviews in advance of formal application for admission are especially encouraged. For the benefit of those who are not acquainted with appropriate members in the Field or Fields of their interest, each Field has selected a representative, as director of graduate studies, to whom inquiries may be addressed.

## AGRICULTURAL ECONOMICS

Faculty: David J. Allee, Richard D. Aplin, Randolph Barker, Solon L. Barracrough, C. Arthur Bratton, Earl H. Brown, Max E. Brunk, David L. Call, George L. Casler, Howard E. Conklin, George J. Conneman, Rachel Dardis, Lawrence B. Darrah, Bennett A. Dominick, Jr., Wendell G. Earle, Olan D. Forker, Donald K. Freebairn, Dana C. Goodrich, Jr., Glenn W. Hedlund, R. Brian How, Robert J. Kalter, C. Del Mar Kearn, Clifton W. Loomis, Edward A. Lutz, John W. Mellor, Joseph F. Metz, Jr., Timothy D. Mount, Daniel I. Padberg, Thomas T. Poleman, Kenneth L. Robinson, Daniel G. Sisler, Robert S. Smith, Bernard F. Stanton, Robert P. Story, William G. Tomek, Stanley W. Warren.

Field Representative: Kenneth L. Robinson, 40 Warren Hall.

### MAJOR AND MINOR SUBJECTS

Agricultural Economics

Farm Management and Production  
Economics

International Economics and  
Development

Marketing and Food Distribution

Policy and Prices

Public Administration and Finance

Resource Economics

The Field offers graduate training leading to the Master of Science and Doctor of Philosophy degrees. The emphasis of the graduate program is on training for independent study and research at the Ph.D. level. However, a terminal M.S. program may be designed to prepare the individual for a career with agriculturally related businesses, in cooperative extension, and in related areas. The intent of the faculty is to make available high-quality, flexible programs that recognize the needs of individual students.

Students who wish to obtain a Ph.D. are usually expected to obtain a Master's degree first; direct admission to a Ph.D. program may be considered if the applicant has an outstanding scholastic record and strong preparation for graduate work in agricultural economics.

One major and one minor are required for the M.S. degree. A candidate for the Ph.D. degree must have one major and two minors, one of which must be taken outside the Field. Ph.D. students often minor in economic theory (in the Field of Economics); other minors available in the Social Sciences are indicated in this *Announcement*.

**ADMISSION REQUIREMENTS.** Each applicant must meet the minimum standards of the Cornell Graduate School. All applicants are urged to take

the Graduate Record Examination Aptitude Test; it is essential for fellow-ship applicants. An undergraduate major in agricultural economics is not required, but strong motivation to do graduate work in this field is expected.

**LANGUAGE REQUIREMENT.** No foreign languages are required by the Field for either the M.S. or the Ph.D. degree. However, a knowledge of one or more foreign languages is sometimes a prerequisite to acceptable professional work. The student's Special Committee members may set such language requirements as they deem necessary.

**EXAMINATIONS.** The Field requires only the examinations required by the Graduate School, as described on p. 11 of this *Announcement*. However, a written examination in agricultural economics is required of Ph.D. students as a part of their Admission to Candidacy Examination.

**RESEARCH AND STUDY OPPORTUNITIES.** The student may pursue research in any of the areas suggested by the major subjects. Other faculty interests include agricultural cooperatives, agricultural geography, business management, farm finance, international trade, regional agricultural development, and quantitative methods as applied to problems in agricultural economics. Within the area of economic development, staff members have special interests in Latin America, South Asia, Southeast Asia, and tropical agriculture.

The primary subject matter interests of the faculty follow.

Farm management and production economics: Messrs. Barker, Bratton, Casler, Conklin, Conneman, Kearn, Loomis, Smith, Stanton, Warren.

International economics and development: Messrs. Barraclough, Freebairn, Mellor, Poleman.

Marketing and food distribution: Messrs. Aplin, Brown, Brunk, Call, Darrah, Dominick, Earle, Forker, Goodrich, Hedlund, How, Metz, Padberg, Story.

Policy and prices: Miss Dardis, Messrs. Mount, Robinson, Sisler, Tomek.

Public administration and finance: Mr. Lutz.

Resource economics: Messrs. Allee and Kalter.

**FINANCIAL ASSISTANCE.** Research assistantships and teaching fellowships provide an opportunity for part-time employment in teaching, research, or extension. Thesis research is often conducted as a part of assistantship duties in connection with research projects supervised by the staff. Students with exceptional academic records are urged to apply for fellowships offered by Cornell University and by New York State; see pp. 14-16 of this *Announcement*.

## Courses

The following list of graduate-level courses in the Field is for the general information of the applicant. Specific information on time, location, and content of these courses is provided in the *Announcement of the College of Agriculture*. Attention is also directed to course offerings in Economics, Statistics, and other related fields.

### 402. FARM MANAGEMENT

Spring term. Credit three hours. Prerequisite: 302 or equivalent. Mr. Conneman.

403. FARM COST ACCOUNTING

Fall term. Credit three hours. Prerequisite: 302. Mr. Kearl.

405. FARM FINANCE

Spring term. Credit three hours. Prerequisite: 302. Mr. Smith.

406. FARM APPRAISAL

Fall term. Credit three hours. Prerequisite: 302. Mr. Warren.

408. PRODUCTION ECONOMICS

Spring term. Credit three hours. Prerequisite: Economics 101-102. Mr. Casler.

441. FOOD DISTRIBUTION

Fall term. Credit four hours. Prerequisite: 240 and 327. Mr. Earle.

443. FOOD INDUSTRY MANAGEMENT

Spring term. Credit four hours. Prerequisite: 441. Mr. Earle.

445. FIELD STUDY OF FOOD INDUSTRIES

Spring term. Credit two hours. Registration by permission. Mr. German.

450. RESOURCE ECONOMICS

Fall term. Credit three hours (four hours with supplemental work). Prerequisite: Economics 102 and Conservation 201 or consent of instructor. Mr. Allee.

452. REGIONAL AGRICULTURAL ANALYSIS

Spring term. Credit four hours. Prerequisite: 150 and 302, which should precede or accompany this course. Mr. Conklin.

464. ECONOMICS OF AGRICULTURAL DEVELOPMENT

Spring term. Credit three hours. Prerequisite: 150 or Economics 101-102 or consent of instructor. Mr. Mellor.

500. THE BUSINESS OF FARMING

Fall term. Credit three hours. Mr. Warren.

507. RESEARCH IN FARM MANAGEMENT

Fall term. Credit two hours. Mr. Stanton.

508. QUANTITATIVE METHODS IN PRODUCTION ECONOMICS

Fall term. Credit four hours. Mr. Robinson.

515. APPLIED ECONOMETRICS IN AGRICULTURAL ECONOMICS

Spring term. Credit three hours. Prerequisite: preparation in economics and statistics at the level of Economics 311-312 and ILR 311 (Statistics II). Mr. Tomek.

540. INTRODUCTION TO MARKETING RESEARCH

Spring term. Credit two hours. Mr. Brunk.

541. FOOD MERCHANDISING AND PROMOTION

Fall term. Credit two hours. Mr. Brunk.

## 56 AGRICULTURAL ECONOMICS

### 544. INTERREGIONAL COMPETITION

Spring term of even-numbered years. Credit two hours. Prerequisite: 508. Messrs. How and Sisler.

### 548. QUANTITATIVE METHODS IN AGRICULTURAL ECONOMICS

Spring term. Credit two hours. Prerequisite: 508 and some knowledge of computer programming, which may be obtained concurrently. Mr. How.

### 550. ECONOMIC ANALYSIS OF PUBLIC RESOURCE INVESTMENT

Spring term. Credit three hours. Prerequisite: Economics 311 or 511 or consent of instructor. Mr. Kalter.

### 552. SPECIAL PROBLEMS IN LAND ECONOMICS

Fall or spring term. Credit one or more hours. Prerequisite: 452 and permission of the instructor. Messrs. Conklin and Allee.

### 560. ECONOMIC ASPECTS OF THE WORLD'S FOOD

Fall term of odd-numbered years. Credit three hours. Prerequisite: basic economics and a course in economic development. Mr. Poleman.

### 626. SEMINAR IN AGRICULTURAL COOPERATION

Spring term. Credit two hours. Mr. Hedlund.

### 637. ADMINISTRATION OF PUBLIC AGRICULTURAL PROGRAMS

Spring term. Credit two hours. Mr. Lutz.

### 641. MARKETING AND PRICING EFFICIENCY

Fall term. Credit three hours. Registration by permission. Mr. Forker.

### 642. MARKET ORGANIZATION AND STRUCTURE

Spring term. Credit three hours. Registration by permission. Mr. Padberg.

### 646. SPECIAL PROBLEMS IN MILK MARKETING

Spring term. Credit two hours. Messrs. Aplin, Forker, and Story.

### 650. RESOURCE ECONOMICS WORKSHOP

Fall term. Credit two to four hours. Open only to students in a Ph.D. program. Mr. Kalter.

### 651. SEMINAR IN AGRICULTURAL POLICY

Spring term. Credit two hours. Mr. Robinson.

### 652. PRINCIPLES OF RESEARCH IN AGRICULTURAL PRODUCTION ECONOMICS

Spring term. Credit three hours. Open only to students in a Ph.D. program. Mr. Conklin.

### 664. SEMINAR ON THE AGRICULTURAL DEVELOPMENT OF SOUTH ASIA

Spring term. Credit two hours. Open only to graduate students who have completed 464 or equivalent. Mr. Mellor.

### 665. SEMINAR ON LATIN AMERICAN AGRICULTURAL POLICY

Fall term. Credit two hours. Prerequisite: basic economics, a course in

economic development, and permission of the instructor. A knowledge of Spanish or Portuguese is highly desirable. Mr. Freebairn.

667. SEMINAR ON THE ECONOMICS OF TROPICAL AGRICULTURE

Fall term in even-numbered years. Credit three hours. Prerequisite: basic economics and a course in economic development. Mr. Poleman.

668. SEMINAR IN THE ECONOMICS OF AGRICULTURAL DEVELOPMENT

Fall term. Credit two hours. Open only to graduate students with permission. Messrs. Barraclough, Call, Conklin, Freebairn, Mellor, Poleman, Sisler, and other staff.

690. SEMINAR IN AGRICULTURAL ECONOMICS EXTENSION

Fall term. Credit two hours. Mr. Bratton.

## ANTHROPOLOGY

Faculty: Robert Ascher, Thomas Gregor, Leighton W. Hazlehurst, Charles F. Hockett, Kenneth A. R. Kennedy, Bernd Lambert, William W. Lambert, Thomas F. Lynch, John V. Murra, John M. Roberts, Lauriston Sharp, James T. Siegel, Robert J. Smith, William A. Stini, R. Brooke Thomas, Judith M. Treisman, Frank W. Young.

Professor-at-Large: L. S. B. Leakey, Centre for Prehistory and Palaeontology.

Field Representative: Kenneth A. R. Kennedy, 225 McGraw.

### MAJOR SUBJECT

Anthropology

### MINOR SUBJECTS

Applied Anthropology<sup>4a</sup>

Archaeology

Physical Anthropology

Psychological Anthropology

Social Anthropology

**MAJOR AND MINOR SUBJECTS.** The Field strongly recommends that candidates seeking a career in anthropology elect the Ph.D. program, but M.A. candidates are occasionally accepted. Because the faculty conceives of its discipline as a unified field, only one major, anthropology, is offered.

Within the context of the approved major subject, a student may opt for training as a generalist or he may choose a specialization. *The student's choice of a specialization is by no means limited to the list of minor subjects appearing above.* However, if he does choose a specialization corresponding to an approved minor subject he may *not* also elect that subject as a minor. Except for this important limitation, the student is free to choose his minor or minors either from among these four or from among those offered by other Fields. All five minor subjects in this Field are available to students in other Fields.

A student in a doctoral program in Anthropology may take one minor subject or two. He makes this decision in consultation with the chairman of his Special Committee.

**ADMISSION REQUIREMENTS.** A faculty committee of the Field, with the Field Representative as chairman, evaluates all applications for admission and

4a. Applied Anthropology is available only to those whose major is in another Field.

awards. All applicants resident in the United States during the year preceding matriculation at Cornell must submit the scores of the Graduate Record Examination Aptitude Test with their other credentials. Those who are accepted but who are not in the United States at the time of application, must submit scores by the close of their first year at Cornell.

The Field requires that a candidate for a higher degree demonstrate a thorough reading knowledge of one language other than English. Any language may be offered which, in the judgment of the candidate's Special Committee, will further his research and professional competence. This is the minimum language requirement of the Field; a student's Special Committee may require a mastery of additional languages or a greater degree of language competence.

Every graduate student is required to gain experience in classroom teaching.

Examinations required by the Graduate School are described on p. 11 of this *Announcement*.

## Research and Study Opportunities

The special interests and competence of a large faculty permit a full and varied curriculum. New, modern laboratory facilities have given impetus to instruction and research in archaeology and physical anthropology. Some of the lines of inquiry and training available, and the faculty members primarily associated with them follow.

American Indian: C. F. Hockett, J. M. Roberts.

Anthropological history and theory: K. A. R. Kennedy, B. Lambert, L. Sharp, R. J. Smith.

Applied anthropology and culture change: L. Sharp, R. J. Smith.

Archaeology: R. Ascher, T. F. Lynch, J. M. Treistman.

Chinese studies: J. M. Treistman.

Comparative religion: L. Sharp, J. T. Siegel.

Cross-cultural studies: W. W. Lambert, J. M. Roberts, F. W. Young.

Economic anthropology and technology: J. V. Murra, J. M. Treistman.

Ethnohistory: J. V. Murra.

Expressive culture (art, folklore, literature, games, models): J. M. Roberts, R. J. Smith.

Japanese studies: R. J. Smith.

Latin American studies: T. Gregor, T. F. Lynch, J. V. Murra, R. B. Thomas, F. W. Young.

Legal anthropology: J. M. Roberts.

Linguistics: C. F. Hockett.

Oceania: B. Lambert, L. Sharp.

Physical anthropology: K. A. R. Kennedy, W. A. Stini, R. B. Thomas.

Political anthropology: J. V. Murra, J. M. Roberts, L. Sharp.

Psychological anthropology: W. W. Lambert, J. M. Roberts.

Social organization: T. Gregor, L. W. Hazlehurst, B. Lambert, L. Sharp, J. T. Siegel.

South Asian studies: L. W. Hazlehurst, K. A. R. Kennedy.

Southeast Asian studies: T. Harrison, L. Sharp, J. T. Siegel.

Urban studies: L. W. Hazlehurst, J. T. Siegel, R. J. Smith.

## Courses

Bracketed courses will not be offered in 1970-71.

415. SURVEY OF ANTHROPOLOGICAL THEORY

Credit four hours.

416. THE CONTENT OF CULTURE

Fall term. Credit four hours. Mr. Roberts.

Attention is given to the description and management of the informational resource known as culture with a view to developing a theory of culture content. Codes, models, and inventories are given specific attention.

418. ETHNOHISTORY

Spring term. Credit four hours. Mr. Murra.

The utilization of concepts derived from field anthropology such as status lineages, rights-in-land, or ethnogenesis in historical research. Problems in evaluating African, Meso-American, and Andean oral traditions and of early European eyewitness reports.

423. KINSHIP AND SOCIAL ORGANIZATION

Fall term. Credit four hours.

430. ETHNOLOGY OF NORTH AMERICA

Spring term. Credit four hours. Mr. Roberts.

432. ETHNOLOGY OF SOUTH AMERICA

Spring term. Credit four hours. Mr. Gregor.

A descriptive survey and analysis of native cultures in terms of social, political, economic, and religious organization. Representative groups from all cultural areas are considered, ranging from such marginal cultures as those of Tierra del Fuego to such complex civilizations as the Inca.

433. ETHNOLOGY OF THE ANDEAN REGION

Fall term. Credit four hours. Mr. Murra.

The ecological, archaeological, ethnohistoric, and contemporary ethnological record of the region. Cultural communities in Andean development and the Andean heritage as a resource for modernization.

434. ETHNOLOGY OF ISLAND SOUTHEAST ASIA

Spring term. Credit four hours. Mr. Siegel.

A survey of cultures of Indonesia, Malaysia, and the Philippines with attention focused on social organization, ritual, belief, and forms of cultural expression. Selected societies will be studied in some detail.

435. ETHNOLOGY OF MAINLAND SOUTHEAST ASIA

Fall term. Credit four hours. Mr. Sharp.

A survey of the development and distribution of major cultural systems and a study of selected highland cultures and lowland civilizations in southern China, Assam, Burma, Thailand, Laos, Cambodia, and Vietnam. The fate of traditional cultural behaviors following the expansion of Chinese, Indian, Moslem, and Western civilizations into these areas.

[436. ETHNOLOGY OF OCEANIA]

Fall term. Credit four hours. Mr. B. Lambert.

438. ETHNOLOGY OF AFRICA

Spring term. Credit four hours.



A social and cultural survey of representative African peoples. Emphasis is placed on the comparative study of political institutions and local descent groups. Ritual beliefs and practices are considered in relation to repetitive and radical change.

#### 441. CULTURE AND SOCIETY IN SOUTH ASIA

Fall term. Credit four hours. Mr. Hazlehurst.

A survey of the social, economic, political, and religious institutions of the countries of South Asia. Both the traditional cultures and the changes which are taking place are considered.

#### 443. CHINESE CULTURE AND SOCIETY

Fall term. Credit four hours.

#### [451. INTERPRETIVE ARCHAEOLOGY]

Fall term. Credit four hours. Mr. Ascher.

#### [452. SCIENCE IN ARCHAEOLOGY]

Spring term. Credit four hours. Mr. Ascher.

#### 453. ENVIRONMENTAL ARCHAEOLOGY

Credit four hours. Miss Treistman.

#### 466. TECHNOLOGY

Spring term. Credit four hours. Miss Treistman.

#### 471-472. PHYSICAL ANTHROPOLOGY LABORATORY

Either or both terms. Credit four hours a term. Prerequisite: 102, 304, or 372; or Biological Sciences 101-102, 103-104, 210, 270, 280, 301, 311, 361, or 362; or consent of the instructors. Fall term: Mr. Kennedy. Spring term: Mr. Stini.

Practical exercises and demonstrations of modern approaches to the methodology of physical anthropology. Emphasis upon comparative primate anatomy, the human palaeontological record, description of skeletal and living subjects, palaeopathology, skeletal maturation, and relevant field techniques for the archaeologist.

#### 497-498. TOPICS IN ANTHROPOLOGY

Throughout the year. Either or both terms. Credit to be arranged. Prerequisite: consent of the instructor. Staff.

#### DEVELOPMENT SOCIOLOGY 420. COMPARATIVE RURAL SOCIETIES

Fall term. Credit three hours. Prerequisite: one general course in anthropology or sociology. Mr. Young.

## Graduate Seminars

#### 501. PROSEMINAR: THE SCOPE OF ANTHROPOLOGY

Fall term. Credit four hours.

#### 502. THE DESIGN OF FIELD RESEARCH

Spring term. Credit four hours.

After consideration of general problems of technique including rapport,

language, and recording of data, the seminar will focus on the formulation of questions to be answered with field data and specification of the types of data adequate to answer them. Topics will include the uses of texts, case histories, observation, interviews, surveys and ethnohistory.

### 503. HUMAN BIOLOGY AND CULTURAL BEHAVIOR

Fall term. Credit four hours. Mr. Stini.

### 507-508. SPECIAL PROBLEMS IN ANTHROPOLOGY

Either term. Credit to be arranged. Staff.

### 513. CONTEMPORARY ANTHROPOLOGICAL THEORY

Fall term. Credit four hours.

### 514. APPLIED ANTHROPOLOGY

Spring term. Credit four hours. Mr. Sharp.

The uses of anthropology in the modern world. Designed not only for students of the humanities and social sciences, but also for natural scientists concerned with the cultural problems involved in technological change, community development, native administration, and modernization in various regions of the world.

### 515. MODELS IN CULTURE

Spring term. Credit four hours. Mr. Roberts.

The place of natural models in culture is examined from the viewpoints of ethnography, anthropological method, and anthropological theory. Attention is given to natural models which are primarily expressive (e.g., games, myths, paintings, etc.) and to models which are primarily cognitive (e.g., maps, quipus, tallies, etc.). The involvements of individuals and groups in such models and the place of models in the management of cultural information by individuals and groups are considered.

### 518. CULTURAL PROCESSES: ROLE "THEORY" AND CULTURAL CHANGE

Spring term. Credit four hours. Mr. Sharp.

### 520. ETHNOLINGUISTICS

Spring term. Credit four hours. Mr. Hockett.

### 523. SOCIAL SYSTEMS: THE ANTHROPOLOGY OF FACE-TO-FACE INTERACTION

Spring term. Credit four hours. Mr. Gregor.

### 528. POLITICAL ANTHROPOLOGY: SOCIAL STRUCTURE AND POLITICS (Also Government 550)

Spring term. Credit four hours. Messrs. Anderson and Siegel.

### 532. SOUTH AMERICA: LOWLAND RESEARCH

Spring term. Credit four hours. Mr. Gregor.

### 534-535. SOUTHEAST ASIA: READINGS IN SPECIAL PROBLEMS

Either term. Credit to be arranged. Messrs. Sharp and Siegel.

62 ANTHROPOLOGY

539. AFRICA

Fall term. Credit four hours.

Consideration of the symbolism and social dynamics of politics and religion in traditional and changing African societies.

540. SOUTH ASIA

Spring term. Credit four hours. Mr. Hazlehurst.

An analysis of selected social, economic, and ideological institutions and developments in India and South Asia, and of present tendencies in regard to them.

541-542. SOUTH ASIA: READINGS IN SPECIAL PROBLEMS

Either term. Credit to be arranged. Mr. Hazlehurst.

543. CHINA

Fall term. Credit four hours.

Consideration of problems in Chinese culture and civilization. Topics to be announced.

545. JAPAN

Fall term. Credit four hours. Mr. Smith.

Japanese society is discussed as a test case for theories of modernization and development, with major emphasis on the historical antecedents of Japan's modern century.

548. COMPARATIVE STUDIES IN COMPLEX SOCIETIES: AGRARIAN CIVILIZATIONS

Spring term. Credit four hours. Mr. Hazlehurst.

561. ASIAN ARCHAEOLOGY

Fall term. Credit four hours. Miss Treistman.

An investigation of selected problems in Asian prehistory, with emphasis on the origins of civilization.

564. EUROPEAN ARCHAEOLOGY

Spring term. Credit four hours. Mr. Lynch.

An investigation of selected problems in the interpretation of European prehistory, ranging from the significance of variation among Mousterian industries to the archaeological identification of Iron Age cultural and linguistic groups.

[565. AGRICULTURE AND CIVILIZATION]

Fall term. Credit four hours. Prerequisite: 364. Mr. Lynch.

575. PHYSICAL ANTHROPOLOGY: PROBLEMS, METHODS AND THEORY

Fall term. Credit four hours. Mr. Stini.

[578. PALAEOANTHROPOLOGY: SOUTH ASIA]

Spring term. Credit four hours. Mr. Kennedy.

601-602. FIELD RESEARCH

Either or both terms. Credit to be arranged. Staff.

# DEVELOPMENT SOCIOLOGY 516. CROSS-CULTURAL RESEARCH METHODS

Spring term. Credit four hours. Mr. Young.

# DEVELOPMENT SOCIOLOGY 550. RESEARCH IN COMPARATIVE MODERNIZATION

Either or both terms. Credit to be arranged. Mr. Young.

# DEVELOPMENT SOCIOLOGY 622. COMMUNICATION AND SOCIAL SYMBOLICS

Spring term. Credit to be arranged. Mr. Young.

## ASIAN STUDIES

### Faculty

China: Knight Biggerstaff (Modern History), Nicholas C. Bodman (Linguistics), Nai-ruenn Chen (Economics), Chuen-tang Chow (Literature), Ta-Chung Liu (Economics), John McCoy (Linguistics and Literature), David Mozingo (Government—International Relations), Charles A. Peterson (Medieval History), Harold Shadick (Literature), Judith M. Treistman (Archaeology), Martie W. Young (Art History).

Japan: Robert J. Smith (Anthropology), Etsuko Terasaki (Literature).

South Asia: D. E. Ashford (Government: Public Administration), H. R. Capener (Sociology), Arch T. Dotson (Government: Development Planning), Gordon H. Fairbanks (Linguistics), Harold Feldman (Child Development), James W. Gair (Linguistics), Leighton W. Hazlehurst (Anthropology), Gerald Kelley (Linguistics), Kenneth A. R. Kennedy (Anthropology), John W. Mellor (Economics).

Southeast Asia: Benedict R. O'G. Anderson (Government), Arch T. Dotson (Government), John M. Echols (Linguistics and Literature), Frank H. Golay (Economics), Robert B. Jones, Jr. (Linguistics), George McT. Kahin (Government), Stanley J. O'Connor (Art History), Robert A. Polson (Development Sociology), Robert M. Quinn (Linguistics), Lauriston Sharp (Anthropology), James T. Siegel (Anthropology), John U. Wolff (Linguistics), O. W. Wolters (History), David K. Wyatt (History).

Visiting Professor:

Southeast Asia: Alexander B. Griswold, Director, Breezewood Foundation.

Field Representative: Chuen-tang Chow, 103 Franklin Hall.

### MINOR SUBJECTS

Asian Studies

East Asian Linguistics

South Asian Linguistics

Southeast Asian Linguistics

The Ph.D. candidate specializing in Asia (or with a serious interest in the area) may select a minor in the Field of Asian Studies consisting of either: (a) concentrated inter-disciplinary study of one area of Asia, or (b) disciplinary or topical concentration which cuts across area boundaries. Details of the minor are to be worked out in consultation with the member

of the candidate's Special Committee representing Asian Studies. Because specialization in Asia usually involves the study of an Asian language, it is essential that the candidate discuss the problem of language work with the entire membership of his Committee, particularly with the member representing his major Field.

Major and minor work is also offered in various Social Science Fields (see appropriate discipline listing in this *Announcement*). Work is also offered in Oriental art, in Chinese literature, in medieval or modern Chinese history, and in Southeast Asian history (see the sections Chinese Literature, History of Art and Archaeology, and History in the *Announcement of the Graduate School: Humanities*).

There are at Cornell three programs concerned with teaching and research on Asia—the China Program, South Asia Program, and Southeast Asia Program. (Selection of a minor in Asian Studies does not in all cases qualify the candidate for membership in one of these programs.) Requirements for membership and information on fellowships and research assistantships available in these programs will be found under their individual descriptions, on pp. 34, 38, and 40 of this *Announcement*.

The work of the Department of Asian Studies is recognized and supported by the United States Office of Education. Under the National Defense Education Act, Cornell has three Language and Area Centers: East Asia, South Asia, and Southeast Asia. Languages currently offered are Burmese, Cebuano, Chinese (Mandarin, Cantonese, and Hokkien), Dutch, Hindi, Indonesian, Japanese, Javanese, Malay, Pali, Sanskrit, Sinhalese, Tagalog, Thai, Urdu, and Vietnamese. Graduate students in Asian Studies are eligible for the National Defense Foreign Language Fellowships offered by the United States Office of Education. Application forms should be requested directly from the Graduate School and returned to it for forwarding to the United States Office of Education, if approved.

Graduate students in Asian Studies are also eligible for the Foreign Area Training Fellowships administered by the Social Science Research Council for study in the United States and for research overseas. Qualified graduate students who are citizens of the United States may apply for Fulbright teaching and research awards for Taiwan, India, Japan, Malaysia, Pakistan, Philippines, and Thailand.

For additional details, consult the Department of Asian Studies, 100 Franklin Hall.

## Courses

### 501-502. SOUTHEAST ASIA

Throughout the year. Credit to be arranged.

A graduate-level survey of the cultures and history of Southeast Asia covering the pre-European, colonial, and postcolonial periods, but with particular emphasis on postwar developments and contemporary problems; will occasionally focus on a problem common to the area as a whole, but usually deals with a different country of Southeast Asia each term.

### 506. SEMINAR: CONTEMPORARY VIETNAM

Fall term. Credit four hours. Prerequisite: consent of the instructor.

### 591-592. SEMINAR: FIELD RESEARCH

Throughout the year.

Field research seminars for selected advanced studies are conducted in South Asia, Southeast Asia, Hong Kong, Taiwan, or Japan by staff members who are themselves working in these areas.

#### 676. SOUTHEAST ASIAN RESEARCH TRAINING SEMINAR

Spring term. Credit to be arranged.

Open only to advanced graduate students preparing for field work in Southeast Asia.

All other courses relevant to the minor in Asian Studies are listed under various disciplines in this *Announcement* and in the *Announcement of the Graduate School: Humanities*. They are listed as a group under Asian Studies in the *Announcement of the College of Arts and Sciences*.

## BUSINESS AND PUBLIC ADMINISTRATION

Faculty: Douglas E. Ashford, Roger M. Battistella, Fredrick T. Bent, Harold Bierman, Earl Brooks, H. Justin Davidson, Melvin G. de Chazeau, Arch T. Dotson, Thomas R. Dyckman, Edward S. Flash, Frank F. Gilmore, Jerome E. Hass, Warren H. Hausman, G. David Hughes, John G. B. Hutchins, David C. Knapp, Thomas M. Lodahl, Alan K. McAdams, Arthur E. Nilsson, John M. Rathmell, Richard A. Rettig, Richard Schramm, Seymour Smidt, William H. Starbuck, David A. Thomas, L. Joseph Thomas, Paul P. Van Riper, Richard R. West.

Field Representative: Thomas R. Dyckman, 502 Malott Hall.

### MAJOR AND MINOR SUBJECTS

A candidate for the degree of Doctor of Philosophy must offer one major and two minor subjects of competence. The major subject must be selected from either Group I or Group II as detailed below. The first minor must be selected from the group not used for the major, with exceptions in some instances as indicated below.

#### GROUP I

Managerial Economics  
Organization Theory and Behavior  
Quantitative Analysis for Administration<sup>5</sup>

#### GROUP II

Accounting	Medical Care Organization and Administration
Business Policy	Production and Operations Management <sup>1</sup>
Finance	Public Administration
Business and Public Policy	Administration of Higher Education (minor subject only)
International Development	
Marketing	
Transportation Economics and Policy	

The Field recognizes that some candidates electing a major subject in Group II may wish to take a first minor in a basic discipline offered in another Field of the Graduate School. This is permitted whenever the proposed subject is reasonably related to the student's major subject. Permission for candidates electing a major subject in Group I to take their first minor in

5. These two subjects may not be taken together as major and first minor.

an applied subject offered in another Field will probably be less frequent, since the applied subjects are the special area of interest in this Field. All substitutions must be approved by the chairman of the Committee on Advanced Degrees.

The first minor is expected to be relatively extensive, and to require a level of competence equivalent to that expected of majors. The second minor may be selected from the above subjects or from another Field. If the first minor is taken within this Field, a student may be encouraged to take a second minor relevant to his program in another Field.

## Aims and Operations of the Field

The objective of the Ph.D. program in this Field is to prepare students for teaching and research in administration in the context of one or more of the institutional frameworks involved—business, government, health care, and higher education. Unlike the professional M.B.A. and M.P.A. programs, its task is not envisioned primarily as preparing practitioners. However, it is highly important that Ph.D. candidates have the same training in relevant core subjects, and a student who has been admitted directly from a Bachelor's degree program is normally required to take such courses. The Ph.D. candidate is, however, expected to study deeply in the disciplinary subjects which form the basis of administrative action and to relate these studies in a meaningful way to such action.

A student entering with a two-year M.B.A. or M.P.A. degree, or the equivalent, may expect to complete the program in approximately three years; if he enters directly from a Bachelor's degree program, four years are normally required. In each case the minimum time is one year less.

The candidate is required to write a thesis under the direction of one or more members of his Special Committee.

The candidate may, at the discretion of his Special Committee, be required to demonstrate oral or written proficiency, or both, in one or more foreign languages.

Besides course examinations a candidate must pass three major examinations. The first, the Qualifying Examination, is given soon after registration to determine if he is properly prepared to continue in the subjects selected, and to serve as a basis for working out a study program. The comprehensive Admission to Candidacy Examination is given on the major and minor subject areas after the candidate has had adequate preparation therein, and is always in two parts, written and oral. Finally, an oral defense of the thesis must be undertaken after the completed manuscript has been approved in substance by the Special Committee.

**ADMISSION REQUIREMENTS.** Admission to the Ph.D. program depends on suitable preparation and evidence of high competence. The most desirable preparation is considered to be strong undergraduate work in such relevant fields as economics, government, sociology, psychology, mathematics, or engineering plus a distinguished record in a professional program leading to the M.B.A. or M.P.A. degree, or the equivalent. While some students are admitted directly from a Bachelor's degree program, the majority come with a relevant Master's degree.

A knowledge of mathematics at least through calculus is desirable.

A student may not register for an M.A. or M.S. degree in this Field. A student desiring a Master's degree should examine the *Announcement of the Graduate School of Business and Public Administration*, which outlines



the program for the degrees of Master of Business Administration and Master of Public Administration.

Applicants, both foreign and domestic, are required to submit aptitude test scores for either the Admission Test for Graduate Study in Business or the Graduate Record Examination.

**FINANCIAL ASSISTANCE.** The Field normally nominates a limited number of candidates with strong records for the University fellowship competition. In addition, a considerable number of assistantships are awarded annually to both resident and incoming students.

## Subject Descriptions

### GROUP I

**MANAGERIAL ECONOMICS** concentrates on economic analysis for decision making. A candidate may study the problems of the total economy, of industries, or of the firm, and may do so within the context of any particular study area, such as international economic relations, economic development, business-government relations, money and banking, investment project analysis, or transportation. He is expected to develop a thorough grasp of relevant economic theory and institutions and a basic understanding of both qualitative and quantitative analysis.

**ORGANIZATION THEORY AND BEHAVIOR** focuses on social and behavioral science approaches to the study of human activity in organizational settings. The major concern is with regularities, differences, and relationships in behavior directed toward purposive ends. Systematic observation, theoretical analysis, and empirical investigation are stressed. A fundamental grounding in at least one of the basic behavioral disciplines is required.

**QUANTITATIVE ANALYSIS FOR ADMINISTRATION** stresses the modern developments in the uses of mathematical and statistical tools and computer technology for the solution of managerial problems. A high level of mathematical competence is an essential element.

### GROUP II

**ACCOUNTING** involves the study of the theory and practice of developing financial data for the two purposes of enabling management to control and plan the development of the enterprise and of enabling others to appraise its condition.

**BUSINESS POLICY** involves the study of business corporations, and particularly of the strategy developed to meet various problems, both internal and external. A substantial knowledge of the functional areas of marketing, production, finance, personnel and labor relations, and accounting is essential.

**FINANCE** focuses on the financial structures and requirements of corporations of various types; the problems of developing and maintaining sound financial condition; the organization and behavior of financial markets of different types; and the influence of public policies at home and abroad on these markets and on corporate finance. A knowledge of accounting is essential.

**BUSINESS AND PUBLIC POLICY** involves the study of the three-way relationship among individuals, business firms, and government. Emphasis may be either on the United States or a foreign area. A substantial knowledge of the political and economic background of public policies is essential. Emphasis is placed on the impact of public policies and regulation on business and of business policies on government, and on the problems of developing socially desirable policies in both the public and private sectors.

**INTERNATIONAL DEVELOPMENT** is the study of the problems of establishing effective public and business institutions in developing parts of the world, with special emphasis on problems of administration, public and private, both indigenous and American, in such areas. A good background in one or more of the basic disciplines of economics, government, sociology, or anthropology is highly desirable.

**MARKETING** is the study of how the analytical tools derived from economics, psychology, sociology, and operations research can be applied in the conduct of the marketing function and in appraising markets. Potential areas of study range from analysis of consumer behavior to research in the decision-making process in the management of marketing organizations.

**TRANSPORTATION ECONOMICS AND POLICY** is the study of the economics of an important business function influencing the geographical structure of economic life, and of the associated problems of carriers, shippers and travelers, and governments.

**MEDICAL CARE ORGANIZATION AND ADMINISTRATION** comprises the study of the complex problems of public policy and administration associated with the organization, financing, and delivery of personal health services. Health services are studied employing a systems framework. Public and private health care arrangements are examined both in hospitals and in the larger framework of public agencies and private firms.

**PRODUCTION AND OPERATIONS MANAGEMENT** emphasizes the study of quantitative methods of analysis, including the use of the computer, in the solution of major economic decision problems of production and operations management.

**PUBLIC ADMINISTRATION** involves an interdisciplinary approach to the study of governmental policies, policy formulation, power relationships, administrative behavior, basic management functions such as personnel and finances, and the broad environment of public affairs. The student is expected to gain competence in bureaucratic and organizational theory and in the methods of the social sciences.

**ADMINISTRATION OF HIGHER EDUCATION** focuses on the application of behavioral, economic, and quantitative methods of analysis and such applied subjects as accounting and finance to the peculiar problems of the large American university.

## Courses

### MANAGERIAL ECONOMICS

#### 124. ECONOMIC ANALYSIS FOR MANAGEMENT I

Fall term. Credit three hours. Messrs. Schramm and Kelman.

125. ECONOMIC ANALYSIS FOR MANAGEMENT II

Spring term. Credit three hours. Messrs. Hausman and Schramm.

375. ECONOMIC AND BUSINESS HISTORY

Fall term. Credit three hours. Mr. Hutchins.

379. ECONOMIC EVALUATION OF CAPITAL INVESTMENT PROJECTS

Spring term. Credit three hours.

380. MANAGERIAL ECONOMICS WORKSHOP

Fall term. Credit three hours. Mr. McAdams.

424. ANALYSIS OF AMERICAN INDUSTRIES

Fall term. Credit three hours. Mr. de Chazeau.

433. SEMINAR IN ORGANIZED MARKETS

Fall term. Credit three hours. Mr. Smidt.

ORGANIZATION THEORY AND BEHAVIOR

120. ORGANIZATION THEORY AND BEHAVIOR

Fall term. Credit two hours. Mr. Lodahl and Miss MacColl.

121. PERSONNEL ADMINISTRATION AND HUMAN RELATIONS

Fall and spring terms. Credit three hours. Mr. Brooks.

500. HUMAN RELATIONS IN ADMINISTRATION

Spring term. Credit three hours.

501. PUBLIC PERSONNEL MANAGEMENT

Spring term. Credit three hours. Mr. Van Riper.

502. ORGANIZATIONAL BEHAVIOR AND ADMINISTRATION

Spring term. Credit three hours. Mr. Brooks.

503. BUSINESS AND INDUSTRIAL PERSONNEL

Spring term. Credit three hours. Mr. Brooks.

900. MANAGEMENT SURVEYS AND ANALYSIS

Spring term. Credit three hours. Mr. Van Riper.

902. SEMINAR IN ORGANIZATION THEORY

Fall term. Credit four hours. Mr. Starbuck.

907. SPECIAL TOPICS IN ORGANIZATION THEORY AND BEHAVIOR

Spring term. Credit three hours.

ILR 628. CASE STUDIES IN ORGANIZATIONAL BEHAVIOR, COMMUNICATION, AND PUBLIC OPINION

Spring term. Credit three hours. Mr. Hodges.

## QUANTITATIVE ANALYSIS FOR ADMINISTRATION

### 123A. QUANTITATIVE METHODS FOR MANAGEMENT I

Fall term. Credit two hours. Messrs. Dyckman and Kinard.

### 123B. INTRODUCTION TO THE COMPUTER

Fall term. Credit one hour. Mr. Kinard.

### 123C. QUANTITATIVE METHODS FOR MANAGEMENT II

Spring term. Credit three hours. Messrs. Dyckman and McClain.

### 456. SEMINAR IN QUANTITATIVE METHODS

Spring term. Credit three hours. Mr. Dyckman.

### 950. INFORMATION SYSTEMS IN ORGANIZATIONS

Spring term. Credit three hours. Mr. Kinard.

### 951. ECONOMIC EVALUATION OF ELECTRONIC DATA PROCESSING SYSTEMS

Spring term. Credit three hours. Mr. Kinard.

### IND. ENG. 9460. INTRODUCTION TO PROBABILITY THEORY

Fall term. Credit four hours.

### IND. ENG. 9470. INTRODUCTION TO STATISTICAL THEORY

Spring term. Credit four hours.

### IND. ENG. 9522. OPERATIONS RESEARCH I

Fall term. Credit three hours.

### IND. ENG. 9523. OPERATIONS RESEARCH II

Spring term. Credit three hours.

## ACCOUNTING

### 122. MANAGERIAL ACCOUNTING

Fall term. Credit four hours. Messrs. Kinard, Hofstedt and Gynther.

### 300. INTERMEDIATE ACCOUNTING

Fall term. Credit three hours. Mr. Gynther.

### 301. ADVANCED FINANCIAL ACCOUNTING

Spring term. Credit three hours. Mr. Hofstedt.

### 302. COST ACCOUNTING

Spring term. Credit three hours. Mr. Dyckman.

### 303. SEMINAR IN FINANCIAL POLICY AND MANAGERIAL ACCOUNTING

Fall term. Credit three hours. Mr. Bierman.

### 304. SEMINAR IN FINANCIAL ACCOUNTING

Spring term. Credit three hours.

305. FEDERAL TAXATION AND DECISION MAKING

Fall term. Credit three hours. Mr. Bierman.

BUSINESS POLICY

200. BUSINESS POLICY

Fall term. Credit four hours. Mr. Gilmore.

308. LAW OF BUSINESS ASSOCIATIONS

Spring term. Credit four hours. Mr. Bugliari.

309. ADVANCED BUSINESS LAW

Fall term. Credit four hours. Mr. Bugliari.

625. INTERNATIONAL BUSINESS POLICY

Spring term. Credit three hours. Mr. Gilmore.

FINANCE

128. FINANCE

Spring term. Credit three hours. Messrs. Bierman and Hass.

426. FINANCIAL MANAGEMENT

Fall term. Credit three hours. Mr. Nilsson.

427. INVESTMENT MANAGEMENT

Spring term. Credit three hours. Mr. Nilsson.

429. FINANCIAL INTERMEDIARIES AND MONEY AND  
CAPITAL MARKETS

Fall term. Credit three hours. Mr. West.

430. MONEY AND BANKING

Spring term. Credit three hours. Mr. West.

432. CAPITAL FINANCING SEMINAR

Fall term. Credit three hours. Mr. Nilsson.

434. PROBLEMS IN CORPORATE FINANCE

Spring term. Credit three hours. Mr. Schramm.

BUSINESS AND PUBLIC POLICY

129. ISSUES IN THE ENVIRONMENT

Fall term. Credit three hours. Messrs. McAdams, Bent, Brown, Hass, and Carter.

201. DETERMINING AND IMPLEMENTING CORPORATE STRATEGY

Spring term. Credit three hours. Mr. Gilmore.

202. BUSINESS ENTERPRISE AND PUBLIC POLICY

Spring term. Credit three hours. Mr. Hutchins.

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### 376. BUSINESS POLICY AND ECONOMIC INSTABILITY

Fall term. Credit three hours. Mr. de Chazeau.

### 377. COMPETITIVE BEHAVIOR AND PUBLIC POLICY

Fall term. Credit three hours. Mr. de Chazeau.

## INTERNATIONAL DEVELOPMENT

### 627. AMERICAN BUSINESS OPERATIONS ABROAD

Fall term. Credit three hours. Mr. Bent.

### 628. SEMINAR IN INTERNATIONAL BUSINESS

Spring term. Credit three hours. Mr. Bent.

### 629. ADMINISTRATION OF PUBLIC OPERATIONS ABROAD

Spring term. Credit three hours. Mr. Bent.

### 632. SEMINAR IN ADMINISTRATION AND DEVELOPMENT

Spring term. Credit four hours. Messrs. Ashford and Dotson.

### GOV. 537. POLITICAL DEVELOPMENT AND SOCIAL CHANGE

Fall term. Credit four hours. Mr. Ashford.

### GOV. 545. IDEOLOGY AND POLITICAL CHANGE

Spring term. Credit four hours. Mr. Ashford.

## MARKETING

### 126. MARKETING

Spring term. Credit three hours. Mr. Hughes.

### 475. SALES MANAGEMENT

Fall term. Credit three hours. Mr. Rathmell.

### 476. MARKETING RESEARCH

Fall term. Credit three hours. Mr. Hughes.

### 478. ADVERTISING MANAGEMENT

Spring term. Credit three hours. Mr. Hughes.

### 480. MARKETING STRATEGY

Spring term. Credit three hours. Mr. Rathmell.

### 481. SEMINAR IN MARKETING THEORY

Fall term. Credit three hours. Mr. Rathmell.

### 482. SEMINAR IN MARKETING AND THE MANAGEMENT SCIENCES

Spring term. Credit three hours. Mr. L. J. Thomas.

### 626. INTERNATIONAL MARKETING

Spring term. Credit three hours. Mr. Rathmell.

## TRANSPORTATION ECONOMICS AND POLICY

### 575. TRANSPORTATION: RATES AND REGULATIONS

Fall term. Credit three hours. Mr. Hutchins.

### 576. TRANSPORTATION: STRUCTURES, OPERATIONS, AND POLICIES

Spring term. Credit three hours. Mr. Hutchins.

## MEDICAL CARE ORGANIZATION AND ADMINISTRATION

### 140. INTRODUCTION TO HOSPITAL AND MEDICAL CARE ADMINISTRATION

Spring term. Credit two hours. Mr. Battistella.

### 141. INTRODUCTION TO CLINICAL MEDICINE

Spring term. Credit three hours. Dr. Samson.

### 142. SOCIOLOGY OF COMMUNITY HEALTH CARE

Spring term. Credit three hours. Mr. Smith.

### 450. EVALUATION OF COMMUNITY HEALTH SERVICES

Fall term. Credit three hours. Mr. Brown.

### 451. PSYCHIATRIC INSTITUTIONS: ADMINISTRATION AND PRACTICE

Spring term. Credit three hours. Drs. Daly and Johnson.

### 452. THE HEALTH PLANNING PROCESS

Spring term. Credit three hours. Mr. Brown.

### 453. LEGAL ASPECTS OF HOSPITAL ADMINISTRATION

Fall term. Credit two hours. Mr. Bugliari.

### 454. POLICY AND PLANNING IN HOSPITALS AND HEALTH AGENCIES

Fall term. Credit three hours. Mr. Van Ness.

### 455. SEMINAR IN HEALTH RESEARCH

Fall term. Credit three hours. Mr. Smith.

### 457. HEALTH ECONOMICS

Spring term. Credit three hours. Mr. MacIntyre.

### 458. HEALTH AND WELFARE POLICY: FOUNDATIONS AND STRATEGIES

Fall term. Credit four hours. Mr. Battistella.

### 459. POLITICAL ECONOMY OF MEDICAL CARE SERVICES

Spring term. Credit three hours. Mr. Kelman.

### 460. QUANTITATIVE MODELS IN THE HEALTH FIELD

Fall term. Credit three hours. Mr. McClain.



## 74 BUSINESS AND PUBLIC ADMINISTRATION

### 461. SELECTED TOPICS IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY: BIOMEDICAL RESEARCH AND DEVELOPMENT

Fall term. Credit three hours. Mr. Rettig.

## PRODUCTION AND OPERATIONS MANAGEMENT

### 127. OPERATIONS MANAGEMENT

Fall and spring terms. Credit three hours. Messrs. Hausman and L. J. Thomas.

### 525. PROBLEMS AND TECHNIQUES IN PRODUCTION MANAGEMENT

Fall term. Credit three hours. Mr. L. J. Thomas.

### 526. CASE STUDIES IN PRODUCTION AND OPERATIONS MANAGEMENT

Spring term. Credit three hours. Mr. Hausman.

## PUBLIC ADMINISTRATION

### 130. MANAGEMENT OF PUBLIC AGENCIES I

Spring term. Credit three hours. Mr. Van Riper.

### 131. MANAGEMENT OF PUBLIC AGENCIES II

Fall term. Credit three hours. Mr. Tollison.

### 428. GOVERNMENTAL FISCAL MANAGEMENT

Spring term. Credit three hours. Mr. Tollison.

### 550. POLITICS AND POLITICAL POWER

Spring term. Credit three hours. Mr. Van Riper.

### 553. THEORY AND PRACTICE OF MUNICIPAL FINANCE

Fall term. Credit three hours.

### 554. SEMINAR IN URBAN GOVERNMENT AND ADMINISTRATION

Fall term. Credit three hours. Mr. Flash.

### 555. ISSUES OF PUBLIC POLICY AND ADMINISTRATION

Spring term. Credit three hours. Mr. Flash.

### 556. SEMINAR IN PUBLIC ADMINISTRATION

Fall term. Credit three hours. Mr. Van Riper.

### 559. CURRENT ISSUES IN SCIENCE, TECHNOLOGY, AND PUBLIC POLICY

Spring term. Credit three hours. Mr. Rettig.

### 560. APPLICATION OF SCIENCE AND TECHNOLOGY IN THE CONTEXT OF INTERGOVERNMENTAL RELATIONS

Spring term. Credit three hours. Mr. Rettig.

### 633. COMPARATIVE PUBLIC ADMINISTRATION

Fall term. Credit three hours.

### 750-751. SEMINAR IN BUSINESS-GOVERNMENT RELATIONS I AND II

Fall and spring terms. Credit three hours each term. Mr. Flash.

### PLANNING 580. AN INTRODUCTION TO SOCIAL PLANNING

Fall term. Credit three hours.

### PLANNING 581. CASE STUDIES IN HUMAN RESOURCE DEVELOPMENT PLANNING

Spring term. Credit two hours.

## ADMINISTRATION OF HIGHER EDUCATION

### 903. CURRENT RESEARCH IN UNIVERSITY ADMINISTRATION

Spring term. Credit three hours. Mr. Starbuck.

## RESEARCH

### 905. SEMINAR IN RESEARCH METHODS

Spring term. Credit three hours. Mr. Starbuck.

### 908. SEMINAR FOR DOCTORAL CANDIDATES

Fall term. Credit three hours. Mr. Schramm.

## CITY AND REGIONAL PLANNING

Faculty: Glenn H. Beyer, Pierre Clavel, Stanislaw Czamanski, Allan G. Feldt, William Goldsmith, Michael Hugo-Brunt, Barclay G. Jones, Burnham Kelly, Thomas W. Mackesey, Kermit C. Parsons, John W. Reys, Courtney Riordan, Sidney Saltzman, Stuart W. Stein.

Field Representative: Barclay G. Jones, 106 West Sibley Hall.

### MAJOR SUBJECTS

City and Regional Planning  
Planning Theory and Systems  
    Analysis  
Urban Planning History  
Urban and Regional Theory

### MINOR SUBJECTS

Environmental Planning and Design  
Planning Theory and Systems  
    Analysis  
Regional Economics and  
    Development Planning  
Social and Health Systems Planning  
Urban Planning History  
Urban and Regional Theory

**ADMISSION REQUIREMENTS.** Applicants are expected to hold a Bachelor's degree from a recognized institution. It may be an academic or professional degree in any field. All applicants resident in the United States during the year preceding matriculation must submit scores of the Graduate Record Examination Aptitude Test taken within the previous two years. Applicants are urged to take the test as early as possible, preferably November, so the results will be available for review.

**FINANCIAL AID.** In addition to the general fellowships of the University, the Department makes a number of awards each year. These include several

graduate research assistantships and teaching fellowships, and a number of Public Health Service Traineeships, available in three training programs: environmental health planning, neighborhood environmental health planning, and comprehensive health planning.

Several national fellowship programs in the Field of City and Regional Planning are administered through the Department. These include fellowship programs of the Department of Housing and Urban Development, NDEA Title IV, Sears, Roebuck Foundation, and the Loula D. Lasker Foundation.

## Aims and Operations of the Field

Candidates may apply for the professional Master's program or for the doctoral program as candidates for the Master's degree. Applicants with previous graduate work will be considered for advanced standing or direct admission to doctoral study provided that the amount of work they have taken is equivalent to that required in the Master's program at Cornell. The Master's program is intended to prepare students for professional practice, and the doctoral program is intended to prepare students to make creative contributions to the field through research, teaching, policy making, and practice.

The course of study for the Master of Regional Planning degree, which is administered by a professional division of the Graduate School, normally requires two years. Cornell undergraduates in the School of Civil Engineering, the School of Industrial Engineering and Operations Research, or in the Department of Architecture may, with permission of their advisers and the chairman of the Department of City and Regional Planning, follow a specialized program which may enable them, if admitted as graduate students, to earn the M.R.P. degree in two or three terms of graduate study.

Students in the first year largely follow a program of study designed to meet area requirements providing training in the basic elements of planning: history, urban and regional theory, planning theory, analytical methods, and design and practice. The second year provides opportunity to pursue these subjects in greater depth, to study problem areas of application such as housing and urban renewal, regional and comparative planning, environmental or comprehensive health planning, or social and social facilities planning, and to take electives outside the Field. A summer office practice and training program is offered in New York City. It is designed to provide work experience in planning agencies and consulting firms in the metropolitan area, combined with lectures, seminars, and field trips. Graduate credit is given, but participation is not a requirement for the M.R.P. degree.

Candidates for the Master's degree may request change of status upon completion of two semesters or may take the Master's degree before applying for transfer to the Ph.D. program. Candidates for the Ph.D. degree must select a major subject from those listed above and must select a major adviser to direct their program of study. It is the Field's policy to encourage the selection of two minor subjects from other Fields. Applicants should therefore consult the *Announcements* of various areas of the Graduate School<sup>6</sup> for possible minor subjects in such Fields as the following: *Social*

6. When requesting information about the Fields of the Graduate School that are not described in this *Announcement*, the writer should list the subjects of study in which he is interested, so that the appropriate *Announcement* may be sent to him.

*Sciences*: Agricultural Economics, Anthropology, Business and Public Administration, Development Sociology, Economics, Government, Housing and Design, Industrial and Labor Relations, Law, Sociology, Statistics; *Biological Sciences*: Conservation, Psychology; *Humanities*: Architecture, History, History of Art and Archaeology; and *Physical Sciences*: Civil Engineering, Computer Science, Operations Research.

Since work for the Ph.D. is considered preparatory to making creative contributions to the discipline, substantial competence in and knowledge of basic analytical and research methods will be required. Candidates may fulfill this requirement by preparation previous to entrance or by course work at Cornell, which may be in a minor subject. Candidates are also required to have some experience in teaching, research, and practice.

**LANGUAGE REQUIREMENTS.** The Field requires Ph.D. candidates to demonstrate (1) reading proficiency in two modern languages other than English, or (2) reading and speaking proficiency in one language; (3) foreign students whose native language is not English may substitute English for one of the languages under (1). The candidate may, with the recommendation of his Special Committee, petition the Field to substitute another research technique for one of the languages.

**EXAMINATIONS.** It is recommended that students take a Qualifying Examination early in their program. The Admission to Candidacy and Final Thesis Examinations required by the Graduate School are described on p. 11 of this *Announcement*.

## Research and Study Opportunities

The Department of City and Regional Planning conducts a program of research in urban and regional studies in cooperation with the Center for Housing and Environmental Studies. Research activities are closely related to and derived from faculty interests and specializations. The faculty interests follow.

Glenn H. Beyer: social and economic aspects of housing, housing for the aged, and housing in developing countries.

Pierre Clavel: planning theory and administration.

Stanislaw Czamanski: economic analysis for planning, including urban growth models, regional social accounts, regional applications of input-output analysis, location theory, housing economics, and urban land economics.

Allan G. Feldt: urban sociology, human ecology, urbanization, comparative metropolitan studies, demography, methodology, and operational gaming.

William Goldsmith: regional development planning and administration, economic analysis, and urban and regional planning in developing countries.

Michael Hugo-Brunt: history of architecture, and city planning and development.

Barclay Gibbs Jones: urban and regional quantitative analysis, urbanization theory, planning theory, environmental health planning, and historic preservation.

Burnham Kelly: land use regulation, development controls, and the housing industry.

Thomas W. Mackesey: history of city planning, and university planning.

Kermit C. Parsons: comprehensive land use planning, institutional and urban university planning, urban design, urban renewal, and the history of college and university planning.

John W. Reps: land use regulation, planning administration, comparative planning, and the history of city planning in the United States.

Courtney Riordan: environmental health planning, comprehensive health planning, and quantitative methods of economic analysis.

Sidney Saltzman: quantitative methods and systems analysis in planning, and computers and information processing systems.

Stuart W. Stein: design of the urban environment, planning and urban design within the context of comprehensive planning, preservation of historic districts, and the enhancement of the visual assets of the city.

## Courses

Most courses in the Department of City and Regional Planning are open to students in any college of the University who have fulfilled the prerequisites and who have the consent of the instructor.

## PLANNING HISTORY

### PLANNING 700. HISTORY OF PLANNING I

Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunst.

Historical methods and research techniques, case studies and aesthetic evaluation, the urban revolution, classical societies, medieval urbanism, the Renaissance and the Baroque in Europe, colonization in North America.

### PLANNING 701. HISTORY OF PLANNING II

Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunst.

Introduction: the social, philanthropic, and planning movements from the 18th century to World War II; industrial revolution and technological change; reform; public health, housing, model industrialists; research techniques; planning pioneers and theorists; garden and lineal cities, high and low density solutions; new town theories.

### PLANNING 702. SEMINAR IN THE HISTORY OF AMERICAN CITY PLANNING

Spring term. Credit two hours. Prerequisite: 700 or permission of the instructor. Mr. Reps.

### PLANNING 704. ARCHITECTURE AND PLANNING IN THE ORIENT (Architecture 435)

Fall term. Credit three hours. Prerequisite: Architecture 400, Planning 700 or 701, or special permission. Mr. Hugo-Brunst.

The evolution of architecture and urbanization in India, China, Cambodia, Japan, and Thailand.

### PLANNING 705. INTRODUCTION TO THE HISTORY OF LANDSCAPE ARCHITECTURE AND DESIGN

Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Hugo-Brunst.

Classical landscape in the Mediterranean and the Middle East, the Islamic Byzantine tradition; medieval cityscape and the agrarian system; the Renaissance: landscape of gardens in Persia, India, China, Thailand, and Japan. The Victorians; landscape in North America; Colonial landscape; the Twentieth Century; horticulture and techniques; landscape in contemporary planning and architecture.

**PLANNING 707. THE HISTORY OF COLONIAL PLANNING**

Fall term. Credit three hours. Prerequisite: Architecture 400, Planning 700, History 371, or special permission. Enrollment restricted to twelve persons. Mr. Hugo-Brunt.

Colonial city planning and civic design in Africa, America, Asia, and Australasia. Case studies from classical times to World War II.

**PLANNING 709. INFORMAL STUDY IN THE HISTORY OF CITY PLANNING**

Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

**URBAN AND REGIONAL THEORY****PLANNING 410. INTRODUCTION TO URBAN PLANNING THEORY AND PRACTICE**

Fall term. Credit three hours. Primarily for undergraduates. Mr. Johnson.

A study of contemporary urban planning practice viewed within the context of the evolution of planning theory and theories of urban development.

**PLANNING 411. INTRODUCTION TO URBAN PLANNING**

Spring term. Credit one hour. May not be taken for credit by those who have taken 510. Staff.

A concise survey of urban planning.

**PLANNING 412. INTRODUCTION TO HUMAN ECOLOGY**

Fall term. Credit three hours. Mr. Feldt.

An examination of the form and development of the human community with respect to spatial, temporal, and functional patterns of organization. Demographic, environmental, and technological characteristics are treated as parameters relevant to the ecological structure of the community.

**PLANNING 510. PRINCIPLES OF CITY AND REGIONAL PLANNING**

Fall term. Credit three hours. Mr. Clavel.

A review of the basic influences in the development of cities. A general view of the theory and accepted practice of city and regional planning, including a study of the social, economic, and legal phases.

**PLANNING 513. SEMINAR IN URBAN ECOLOGY**

Spring term. Credit two hours. Prerequisite: 412 or equivalent. Mr. Feldt.

A survey of major social science studies and theories of urban space and social development. Intended primarily for students with little or no previous training in the social sciences.

**PLANNING 715. SEMINAR IN INDUSTRIAL LOCATION AND REGIONAL DEVELOPMENT**

Fall term. Credit three hours. Mr. Czamanski.

Topics include interregional location theory and a review of various techniques of selecting optimum locations. The effects of new plants upon regional development are discussed as well as economic problems of declining open regions. Knowledge of mathematics and of modern quantitative methods is not a precondition for admission, but ability to master them during the course is assumed.

**PLANNING 716. ADVANCED URBAN AND REGIONAL THEORY**

Fall term. Credit two hours. Prerequisite: permission of instructor. Mr. Jones.

Seminar in the theory of urban spatial organization. Economic, technological, and social factors leading to urbanization and various kinds of spatial organization will be explored. Major theoretical contributions to the understanding of intraregional and intraurban distribution of population and economic activity will be reviewed.

**PLANNING 717. SEMINAR IN URBAN AND REGIONAL THEORY**

Spring term. Credit two hours. Prerequisite: permission of instructor. Mr. Jones.

A continuation of 716 concentrating on recent developments.

**PLANNING 719. INFORMAL STUDY IN URBAN AND REGIONAL THEORY**

Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

**PLANNING THEORY, ADMINISTRATION, AND IMPLEMENTATION**

**PLANNING 520. PLANNING THEORY**

Fall term. Credit three hours. Mr. Jones.

Introduction to theory of city and regional planning. Planning is considered as a method of decision making with the purpose of achieving a command over the major tools for problem identification, analysis, and resolution.

**PLANNING 521. POLITICS OF THE PLANNING PROCESS**

Spring term. Credit three hours. Mr. Clavel.

Theories of the planning process are compared with concepts of political process and political change. Points of tension, overlap, and complementarity are examined in the context of city and regional planning and development agencies, intergovernmental relations, the regulatory process, neighborhood and subregional development movements, and national planning agencies. Alternative models for the study of such institutions and processes will be assessed for their usefulness as guides to planners and researchers.

**PLANNING 523. LEGAL ASPECTS OF PLANNING**

Spring term. Credit two hours. Prerequisite: 510 or permission of the instructor. Mr. Reps.

Legal aspects of preparing and administering zoning ordinances, subdivision regulations, housing codes, official map regulations, and related subjects.

**PLANNING 620. PLANNING ADMINISTRATION**

Fall term. Credit four hours. Prerequisite: 520, or permission of the instructor. Mr. Clavel.

A seminar examining organizational and administrative models relevant to plan formulation and implementation. The themes of hierarchy, control, specialization, representation, professionalization and organizational development are dealt with in the context of planning theory and social system change. Applications are made to such programs as community action, regional development, urban renewal, and land use control.

**PLANNING 622. TECHNIQUES OF PLANNING IMPLEMENTATION AND CONTROL**

Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Riordan.



The purpose of this course is to present one subset of new developments in computer-based management techniques: the network-based management control systems. Particular attention will be given to a discussion of the two most well-known versions of such systems, CPM (Critical Path Method) and PERT (Program Evaluation and Review Techniques). In addition, special attention will be focused upon the use of digital computer simulation as a potentially powerful extension of these systems.

#### PLANNING 624. URBAN LAND POLICY AND PROGRAMS

Fall term. Credit two hours. Prerequisite: 523 or permission of the instructor. Mr. Reps.

Consideration of major problems of urban land control and management and possible solutions. Subjects for discussion include taxation as a method of land use planning, compensation and betterment, large scale public land acquisition, subsidies and incentives, and acquisition of development rights or easements. Several public planning systems of other countries will be studied, contrasted with the United States, and evaluated.

#### PLANNING 626. NEW TOWNS

Fall term. Credit two hours. Prerequisite: permission of the instructor. Mr. Reps.

Investigation of the role of new towns and programs of new town planning and development in western society. Topics to be covered will include the following: historical background of new towns programs in France, England, Switzerland, Ireland, and colonial America; Ebenezer Howard and the garden city movement in England; the British new towns Act of 1946 and its administration; the planned capitals of Washington, Canberra, Brazilia, Chandigarh, Islamabad, Ankara, New Delhi; planned state capitals in the United States; greenbelt towns of the Resettlement Administration; postwar private enterprise new towns in America; federal, state, and local legislation for new towns; recent proposals for new towns in developing countries; and the design, social, and economic problems of new town development. Readings, research paper, and seminar presentations.

#### PLANNING 629. INFORMAL STUDY IN LEGAL ASPECTS OF PLANNING

Either term. Credit as assigned. Prerequisite: permission of the instructor. Mr. Kelly.

#### PLANNING 720. SEMINAR IN PLANNING THEORY

Fall term. Credit two hours. Prerequisite: permission of the instructor. Mr. Jones.

A survey of the works of scholars who have contributed to current thinking about planning theory. The course deals with alternative assumptions concerning models of man and theoretical concepts concerning the nature of planning today.

#### PLANNING 729. INFORMAL STUDY IN PLANNING ADMINISTRATION

Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

### PLANNING ANALYSIS

#### PLANNING 531. PLANNING ANALYSIS

Spring term. Credit four hours. Prerequisite: 520. Mr. Jones.

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City planning applications of general analytical techniques of social science; population, economic, land-use, and transportation models.

### PLANNING 533. PLANNING METHODS AND TECHNIQUES

Spring term. Credit two hours. Prerequisite: 510 or permission of the instructor. Mr. Parsons.

Standards and survey methods for measuring education, recreation, and other community facility needs. Commercial, industrial, and residential land-use planning; transportation, housing, and environmental quality surveys.

### PLANNING 536. INTRODUCTION TO COMPUTER PROGRAMMING

Fall term. Credit one hour. Mr. Saltzman.

An introduction to the use of computers in the problem-solving and planning processes. The simplified programming language CUPL will be taught and students will run problems on the Cornell computer. The use of library routines will also be introduced. Advantages and limitations of using computers will also be considered.

### PLANNING 537. MANAGEMENT INFORMATION SYSTEMS

Spring term. Credit three hours. Prerequisite: 536 or equivalent, or permission of the instructor. Mr. Saltzman.

Considers methods and techniques for the design and use of computer-based management information systems. The role of the computer and its effects on various administrative control and decision functions are also discussed. Important hardware and software considerations in storing, processing, and retrieving of management information are covered including data organization, on-line and batch processing, multiprogramming, interrupts, file structures, telecommunications, etc. Applications in various public, medical, and business organizations are examined. Students are expected to program and run assigned problems on the Cornell computer system.

### PLANNING 630. PLANNING PUBLIC INVESTMENTS

Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Riordan.

A detailed and rigorous examination, from the point of view of theory and practice, of the following methods currently used in the planning and evaluation of public investments: benefit cost analysis; cost-effectiveness analysis; and capital budgeting. In addition, the integration of these methods into planning-programming-budgeting systems will be discussed.

### PLANNING 631. RESEARCH METHODS IN PLANNING

Spring term. Credit two hours. Mr. Feldt.

Basic coverage of some of the more common research techniques used in the social sciences, including a survey of basic data sources, methods of survey research, ecological methods, and some of the more fundamental statistical methods. A number of the methods covered will be utilized in developing a major research report in conjunction with requirements for the following year's field problem.

### PLANNING 636. SEMINAR IN URBAN AND REGIONAL INFORMATION SYSTEMS

Fall term. Credit three hours. Prerequisite: 531 and 537 or permission of the instructor. Mr. Saltzman.

An examination of problems, methods, and uses of computer-based infor-

mation systems in urban and regional planning. Topics to be covered will vary from year to year and may, for example, include definition, acquisition, and organization for large-scale data bases; economic considerations in the use of information systems; analysis of application in transportation, housing, health, and land-use studies; applications of computer graphics in planning, etc.

#### PLANNING 732. SEMINAR IN REGIONAL SOCIAL ACCOUNTING

Fall term. Credit three hours. Mr. Czamanski.

An advanced seminar in methods of construction and regional application of social accounting. Topics covered include income and product accounts, balance of payments, money flows, and wealth accounting. Extensive references are made to methods used in various countries and to recent regional case studies.

#### PLANNING 733. SEMINAR IN REGIONAL INTERINDUSTRY ANALYSIS AND PROGRAMMING

Spring term. Credit three hours. Mr. Czamanski.

Advanced treatment of regional industrial structure, methods of construction and applications of input-output, linear programming, integer and nonlinear programming, elements of game theory.

#### PLANNING 739. INFORMAL STUDY IN PLANNING ANALYSIS

Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

### PLANNING DESIGN AND PRACTICE

#### PLANNING 540. INTRODUCTION TO PLANNING DESIGN

Spring term. Credit two hours. Required of all graduate planning students without undergraduate training in design. Messrs. Parsons and Hurtt.

Introduction to the tools of physical design and graphic presentation. Investigation of the sources of basic information for physical design, the formulation of a physical design program, the preparation of solutions to elementary design problems and presentation techniques.

#### PLANNING 541. PLANNING DESIGN

Spring term. Credit four hours. Graduate students in architecture may substitute one or more of the problems for required design studies in Architecture 190 with permission of their adviser. Messrs. Parsons and Hurtt, visiting lecturers.

Lectures, seminars, and problems in the basic principles of site planning, subdivision, large-scale three-dimensional design, and the interrelationships of land uses in a variety of urban and metropolitan situations. Alternative patterns of urban development and their implications will be examined. Students are assigned a series of problems including the design of the neighborhood, the district, parts of the existing city, and the new town. Students will work individually and in teams.

#### PLANNING 542. CITY PLANNING PRACTICE

Summer term. Credit three hours. Open to graduate students in planning and others by permission. Mr. Parsons, staff, and visiting lecturers.

Summer internship in the New York metropolitan area in public planning, development and renewal agencies, or planning consultants' offices, combined

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with lectures and discussions two evenings a week and field trips in the New York area and to other East Coast cities. (Instruction period for the course in the College of Architecture New York City Program facilities is limited to July and August.)

### PLANNING 640. FIELD PROBLEM IN URBAN PLANNING

Fall term. Credit six hours. Prerequisite: 531 and 541 or permission of the instructor. Messrs. Parsons, Feldt, and visiting lecturers.

Research and analysis in an urban area leading to preparation of comprehensive plans and effectuation programs; use of operational gaming techniques in the planning process; lectures, field trips, individual and group reports.

### PLANNING 642. SEMINAR IN URBAN DESIGN I

Fall term. Credit two hours. Prerequisite: Architecture 105 or Planning 540 and permission of the instructor. Mr. Parsons.

Investigation of historical and current thought on the visual aspects of cities, including evaluation of technological and cultural influences on urban design, perception of urban form, and relationships between contemporary city planning process and visual form in cities.

### PLANNING 643. SEMINAR IN URBAN DESIGN II

Spring term. Credit two hours. Prerequisite: 642 or permission of the instructor. Mr. Stein.

Case studies of urban design projects presented by various faculty members and visitors plus independent research to allow students to pursue urban design issues in depth.

### PLANNING 644. DESIGN AND CONSERVATION

Fall term. Credit two hours. Messrs. Jacobs and Jones.

The rationale for and methods of utilizing existing cultural and aesthetic resources in the planning and design of regions and cities.

### PLANNING 646. WORKSHOP IN HEURISTIC GAMING TECHNIQUES

Fall term. Credit two hours. Limited enrollment with priority to students taking the planning field problem concurrently. Mr. Feldt and staff.

Exploration and use of a limited number of heuristic gaming devices dealing with problems in planning and urban theory. Special attention will be given to models representing the community under analysis in the field problems as well as to models dealing with more abstracted urban and regional configurations.

### PLANNING 749. INFORMAL STUDY IN URBAN DESIGN

Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

## URBAN RENEWAL AND HOUSING

### PLANNING 651. SEMINAR IN URBAN RENEWAL

Spring term. Credit two hours. Prerequisite: 510 or permission of the instructor. Mr. Winston.

An exploration of current programs to revitalize our cities, the concepts of blight and urban renewal, and discussion of current policies and procedures in federal, state, and local government.

**PLANNING 753. THE ECONOMICS OF INTRA-METROPOLITAN LAND USE**

Spring term. Credit two hours. Prerequisite: permission of instructor. Mr. Czamanski.

The spatial arrangement of urban functions, value as determinant of land use, measurement methods, urban structures and forms, public interest and controls, urban renewal and redevelopment, and social and economic costs and benefits. Location of residential and industrial areas and retail center.

**PLANNING 759. INFORMAL STUDY IN HOUSING AND URBAN RENEWAL**

Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

**REGIONAL AND COMPARATIVE PLANNING****PLANNING 660. INTRODUCTION TO REGIONAL DEVELOPMENT PLANNING**

Fall term. Credit two hours. Prerequisite: 531 or permission of the instructor. Mr. Goldsmith.

The course will be focused on problems of and theories about development of lagging, underdeveloped, or poor regions of both industrial and developing nations. Readings will survey various theoretical works upon which regional development planning is, or ought to be, based. The latter parts of the course will deal with the difficult transition from theory to planning recommendations and policy implementation. Brief case studies will be used for illustration.

**PLANNING 661. STATE PLANNING**

Spring term. Credit two hours. Prerequisite: 660 or permission of the instructor.

History of state planning and the current status and trends in state planning in the United States. Emphasis will be given to an analysis of contemporary state planning functions, administrative position of the state planning agency, federal-state relations, state and regional planning, coordination of the state planning agency and other state agencies, and the place of functional planning at the state level.

**PLANNING 663. REGIONAL PLANNING AND DEVELOPMENT IN DEVELOPING COUNTRIES**

Spring term. Credit two hours. Prerequisite: 660 or permission of the instructor. Mr. Goldsmith.

Selected theories and development problems from 660 will be elaborated, deepened, and applied. Several extensive case studies of development planning will be analyzed and evaluated with those theories and with criteria suggested by them.

**PLANNING 669. INFORMAL STUDY IN COMPARATIVE PLANNING**

Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

**PLANNING 760. SEMINAR IN REGIONAL MODEL CONSTRUCTION**

Fall term. Credit three hours. Prerequisite: 732, 733 or equivalent, or permission of the instructor. Mr. Czamanski.

Elements of a model, calibrating and simulation. Treatment of capital accumulation, existing resources, stability, disembodied and embodied technical progress. Vintage models, problems of capital valuation and capacity. Labor and migrations, balanced and unbalanced growth. The Harrod-Domar model, the two gaps, shift analysis. Some two and multisector models.

#### PLANNING 761. ADVANCED SEMINAR IN REGIONAL MODEL CONSTRUCTION

Spring term. Credit three hours. Continuation of 760. Mr. Czamanski.

Dynamic elements in regional models, treatment of time, depreciation, replacement and gestation lags. Linear and nonlinear systems. Elements of regional growth, friction of space, factor mobility, externalities and allocation of resources, growth poles, industrial complex analysis. Methods of estimating regional models, identification, recursiveness, indirect methods. Some recent regional models.

#### PLANNING 769. INFORMAL STUDY IN REGIONAL PLANNING

Either term. Credit as assigned. Prerequisite: permission of instructor. Staff.

### ENVIRONMENTAL HEALTH PLANNING

#### PLANNING 570. ENVIRONMENTAL HEALTH PLANNING

Fall term. Credit two hours. Messrs. Jones and Riordan.

Introduction to concepts and issues in environmental health planning. Topics covered include the planning problems involved in the control of water quality, liquid and solid waste disposal, air quality, and housing quality.

#### PLANNING 571. SEMINAR IN NEIGHBORHOOD THEORY

Spring term. Credit three hours. Limited enrollment, consent of the instructors required. Messrs. Feldt and Stein.

An examination of the concept of neighborhood in urban society based upon a consideration of the interrelationship between design elements and human behavior. Major theoretical and empirical approaches to the neighborhood will be reviewed and placed in the context of recently developing thought, practice, and research in urban planning theory.

#### PLANNING 671. PLANNING AND EVALUATION OF ENVIRONMENTAL HEALTH PROGRAMS AND PROJECTS

Spring term. Credit three hours. Prerequisite: 630 or permission of the instructor. Mr. Riordan.

The major focus is an examination of the use of quantitative methods and economic analysis as aids to social decision making with regard to action in the area of environmental health. The purpose is to expose the student who already possesses a methodological competence to the application of these methods in the study of the particular problems of environmental health. Topics covered include: rational social decision making and environmental health; the economics of environmental quality management; investment models for the size and location of regional systems of waste treatment, water treatment, and solid-waste-disposal facilities; and selected mathematical and statistical models used to describe, explain, or identify selected environmental health problems.

#### PLANNING 672. NEIGHBORHOOD THEORY

Fall term. Credit three hours. Prerequisite: Planning 571 or permission of the instructor. Messrs. Hurtt, Stein, and Feldt.

An advanced seminar on environmental health planning in neighborhoods, continuing the exploration of physical and social relationships in the design of the residential environment. Special emphasis is given to the decisions of the urban designer and the architect concerning physical aspects of the neighborhood and their relevance to social and psychological goals.

#### PLANNING 673. ECONOMIC ANALYSIS AND HUMAN RESOURCES PLANNING

Spring term. Credit three hours. Prerequisites: 630 or consent of the instructor. Mr. Riordan.

The purpose of this course is to examine economic analysis as it is currently being used in the areas of health planning, educational planning, selected areas of social planning, and urban renewal and housing, and to explore the potentiality for more extensive and powerful use in the future. The emphasis is upon application; students are assumed to have a foundation in basic economic theory, quantitative methods, and such techniques as PPBS, benefit cost analysis, and cost-effectiveness analysis.

#### PLANNING 779. INFORMAL STUDY IN ENVIRONMENTAL HEALTH PLANNING

Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.

### SOCIAL AND SOCIAL FACILITIES PLANNING

#### PLANNING 580. AN INTRODUCTION TO SOCIAL PLANNING

Fall term. Credit three hours. Mrs. Reiner.

Summary review of concepts and labels for various approaches to planning with people (individually and collectively) as the units of analysis. Presentation of selected methods specific to social planning as applied to the social services. Examination in detail of planning in the social services including both substance of policy and planning in these sectors, and their contextual assumptions of American society.

#### PLANNING 581. CASE STUDIES IN HUMAN RESOURCE DEVELOPMENT PLANNING

Spring term. Credit two hours.

A review of methods and techniques of planning for human resource development. Specific illustrations from the field of social, health, and educational planning, as well as more comprehensive social planning efforts, will be examined.

#### PLANNING 685. INSTITUTIONAL PLANNING

Spring term. Credit two hours. Prerequisite: 510 or 520 or permission of the instructor. Mr. Parsons.

A seminar in programming and area planning of facilities for institutions including universities, medical centers, and churches. Administrative organization, space use studies, program development, location and function analysis, enrollment projection, and institutional systems. Application of city planning techniques to institutional planning.

#### PLANNING 789. INFORMAL STUDIES IN SOCIAL AND SOCIAL FACILITIES PLANNING

Either term. Credit as assigned. Prerequisite: permission of the instructor. Staff.



## THESES

### PLANNING 699. THESIS IN CITY AND REGIONAL PLANNING

Either term. Credit as assigned.

Independent research by candidates for the Master's degree.

### PLANNING 790. PLANNING RESEARCH SEMINAR

Fall and spring term. Credit one hour. Staff.

Presentation and discussion of current departmental research. Registration limited to advanced doctoral candidates.

### PLANNING 799. DISSERTATION IN CITY AND REGIONAL PLANNING

Either term. Credit as assigned.

Advanced independent research by candidates for the Ph.D. degree.

## COMMUNICATION ARTS

Faculty: Jack A. Barwind, Joseph B. Bugliari, Royal D. Colle, Robert H. Crawford, Chester H. Freeman, Russell D. Martin, Charles C. Russell, Victor R. Stephen, William B. Ward.

Field Representative: Royal D. Colle, 390 Roberts Hall.

### MAJOR SUBJECT

Communication Arts

The Field offers graduate training leading to a Master's in Communication Arts. The graduate professional degree program in Communication Arts places emphasis on three elements: (1) an analysis of the communication process, (2) exploration of the potential of current and new communication techniques and technology, and (3) application of these elements to specific communication problems. Focus of the program is more on the strategic application of communication knowledge and technology, both mass media and interpersonal, than on technical competence in media operation.

**ADMISSION REQUIREMENTS.** Normally, each applicant must meet the minimum requirements for the Cornell Graduate School. In cases of applicants whose academic records are outdated or are not pertinent to the profession, evidence of superior performance in the professional field, normally for at least three years, would be considered in combination with evidence bearing on intellectual and personal development, undergraduate record, test scores, special course work taken after completion of the bachelor's degree, and similar documentation.

An undergraduate major in communication is not required, but candidates may be asked to take an extra semester of work to make up deficiencies. Candidates may have a variety of undergraduate degrees, including communication arts, the humanities, and the social, biological, agricultural and physical sciences. It is expected, however, that applicants for the program will have some competence in one or several areas of communication through course work or experience, or will be willing to spend time beyond the normal degree requirements to gain this competence. The extent of this competence will be decided on a case-by-case basis.

**LANGUAGES.** No foreign languages are required by the Field. However, some professional opportunities may be dependent on the knowledge of one or more foreign languages. Upon evaluation of goals, the candidate and the chairman of his committee determine the desirability for including languages in the program.

**EXAMINATIONS.** The Field requires only the examinations listed by the Graduate School on p. 11 of this *Announcement*.

**RESEARCH.** The faculty in this Field holds research interests in the following areas: press, telecommunication, international communication, interpersonal communication, visual communication, and sociopolitical dimensions of the mass media.

## Courses

Specific programs are designed to fit the needs of each candidate. Information on time, location, and content of these courses is provided in the *Announcement of the College of Agriculture*.

The following courses are open to graduate students.

### 200. THEORY OF HUMAN COMMUNICATION

Fall term. Credit three hours. Mr. Barwind.

### 214. HISTORY OF MASS MEDIA

Spring term. Credit three hours. Mr. Crawford.

### 215. INTRODUCTION TO MASS MEDIA

Fall term. Credit three hours. Mr. Russell.

### 301. ORAL COMMUNICATION

Fall or spring term. Credit three hours. Messrs. Barwind, Freeman, and Martin.

### 302. ADVANCED ORAL COMMUNICATION

Fall or spring term. Credit two hours. Messrs. Barwind, Freeman, and Martin.

### 303. DISCUSSION

Spring term. Credit three hours.

### 311. RADIO AND TELEVISION COMMUNICATION

Fall term. Credit three hours.

### 312. ADVERTISING AND PROMOTION

Spring term. Credit three hours. Mr. Russell.

### 313. MAGAZINE WRITING

Spring term. Credit three hours. Mr. Ward.

### 315. NEWS WRITING

Fall term. Credit three hours. Mr. Crawford.

### 316. SCIENCE WRITING

Spring term. Credit three hours. Mr. Crawford.

## 90 COMMUNICATION ARTS

### 318. RADIO WRITING AND PRODUCTION

Spring term. Credit three hours.

### 319. TELEVISION WRITING AND PRODUCTION

Fall term. Credit three hours.

### 401. COMMUNICATION LAW

Spring term. Credit three hours. Mr. Bugliari.

### 403. COMMUNICATION AND SOCIETY

Fall term. Credit three hours.

### 404. PHILOSOPHY OF HUMAN COMMUNICATION

Spring term. Credit three hours. Mr. Barwind.

### 430. VISUAL COMMUNICATION

Spring term. Credit three hours. Mr. Stephen.

### 431. ART OF PUBLICATION

Fall term. Credit three hours. Mr. Stephen.

The following are graduate-level courses.

### 501. INTERNATIONAL COMMUNICATION

Fall term. Credit three hours. Mr. Colle.

Analysis of the purposes, techniques, and effects of organizations involved in cross-national communication, with particular emphasis on the mass media. Also considered are the international conventions and other agreements that pertain to international communication.

### 512. SEMINAR: INTERPERSONAL COMMUNICATION

Spring term. Credit three hours. Staff.

A study of recent advances and research in listening, conference, small-group interaction, and nonverbal communication. New developments will be examined as they relate to business, administration, and education.

### 521. SEMINAR: UNITED STATES COMMUNICATION

Fall term. Credit three hours. Mr. Colle.

An examination of the structure of communication in the United States focusing particularly on the organization, content, controls, and audience of the print, broadcast, and film media. Selected media of other nations are included in the analysis to provide a perspective on the United States system.

### 524. COMMUNICATION IN DEVELOPING NATIONS

Fall term. Credit three hours. Mr. Crawford.

An examination of existing communication patterns and systems and their contributions to the development process. Special attention is given to the interaction between communication development and national development in primarily agrarian societies.

### 526. COMPARATIVE MASS MEDIA

Spring term. Credit three hours.

A study of the mass media in several national settings with particular attention to the structure, controls, audience, and content of press and telecommunications.

## 531. STUDIES IN COMMUNICATION

Fall term. Credit three hours. Mr. Crawford.

An analysis of classic and contemporary research in communication, emphasizing both the findings of the studies and the methods of investigation.

## 543. FRONTIERS IN COMMUNICATION

Fall term. Credit three hours. Staff and invited specialists.

A study of current developments in communication, with an emphasis on the creative application of the newest methods, materials, and technology in visual, print, film, oral, and telecommunication media to the contemporary and future problems in communication. Examples include the applications and implications of satellite communication, multimedia "self" teaching systems, mobile printing technology, facsimile, computer retrieval systems, heat-power radio, electronic video recorder, laser beams, etc.

## 550. ADVANCED COMMUNICATION SEMINAR

Spring term. Credit three hours. Mr. Crawford.

A course designed to give students the opportunity to study and work on special problems in communication.

## 595. DIRECTED GRADUATE STUDY

Fall and spring terms. Credit three hours. Staff.

## DEVELOPMENT SOCIOLOGY

Faculty: Ward W. Bauder, Harold R. Capener, Pierre Clavel, Gordon J. Cummings, Paul R. Eberts, Eugene C. Erickson, Allan G. Feldt, Joe D. Francis, Olaf F. Larson, Robert A. Polson, William W. Reeder, Jerry D. Stockdale, Philip Taietz, William F. Whyte, Lawrence K. Williams, Robin M. Williams, Jr., Frank W. Young.

Field Representative: Olaf F. Larson, Warren Hall.

## MAJOR SUBJECTS

Development Sociology  
Organization Behavior and Social  
Action  
Rural Sociology

## MINOR SUBJECTS

Development Sociology  
Organization Behavior and Social  
Action  
Rural Sociology  
Methods of Social Research (Ph.D.  
only)  
Occupational Sociology (Ph.D. only)

The Field offers training leading to the Master of Science and Doctor of Philosophy degrees, with emphasis on rural societies, on rural social systems, and on the community and regional development of nations. The program offers preparation for research, for extension work and the application of sociology, for rural development work in modernizing countries, and for college teaching.

The prospective student is advised to consult the brochure *Sociology at Cornell*, which may be obtained by writing to the Field Representative.

**ADMISSION REQUIREMENTS.** Applicants must meet the minimum standards of the Cornell Graduate School described in this *Announcement*. Graduate Record Examination Aptitude Test scores are requested of United

States and Canadian applicants and are essential for fellowship applicants. An undergraduate major in sociology is not required. Completion of the Master's degree, at an institution of recognized standing, is prerequisite to acceptance in the Ph.D. program.

**LANGUAGE REQUIREMENT.** The Field does not require foreign languages for either the M.S. or the Ph.D. degree, but the student's Special Committee sets such language requirements as the members deem necessary. Typically, the Ph.D. candidate must demonstrate proficiency in at least one of the foreign languages used for scholarly purposes or in a language appropriate to the student's specialized area of interest, such as Latin America or South Asia.

**EXAMINATIONS AND OTHER FIELD REQUIREMENTS.** In addition to the examinations required by the Graduate School, as described in this *Announcement*, students entering the Ph.D. program must take a diagnostic qualifying examination. This examination may be given in conjunction with the Master's final examination for those who complete the Master's degree at Cornell; otherwise, it is normally taken during the first term after entry into the Ph.D. program.

Ph.D. candidates are required to have directed teaching experience while at Cornell.

One major and one minor subject are required for the M.S. degree; a thesis is also required. A Ph.D. candidate selects one major and two minor subjects. Students are encouraged to choose minors in other Fields, and Ph.D. candidates are required to choose one external minor.

**FINANCIAL ASSISTANCE.** Assistantships in the Department of Rural Sociology or cooperating departments provide part-time employment in teaching, research, or extension. In addition to a limited number of nominations for the fellowships awarded in open competition by the Graduate School, the Field may recommend candidates for the Liberty Hyde Bailey research assistantships in the agricultural sciences awarded to students in a Ph.D. program. Thesis research is often conducted as a part of assistantship duties in connection with research supervised by the faculty. A candidate for the M.S. degree may be recommended by the Field for a maximum of four terms of University-administered fellowship or assistantship support; a doctoral candidate may be recommended for a maximum of eight terms of such support in his combined M.S.-Ph.D. program; an exception may be granted if the dissertation requires data collection in another country. Admission to the Graduate School for students from outside the United States is contingent upon evidence of adequate financial support; first-year foreign students are not usually awarded a fellowship or assistantship.

## Research and Study Opportunities

Students may pursue research in any of the areas suggested by the major and minor subjects and may participate in investigations conducted by members of the Field. A Ford Foundation grant has supported an expanded rural sociology program of training and research related to modernization and development in low-income countries. Field members based in the Department of Rural Sociology draw upon the resources of the Cornell University Agricultural Experiment Station for their research. Recent and current activities under this sponsorship include studies of the community and its organization, comparative modernization, decision making in farm

families, development of American rural society, multicounty and regional development, occupations and farm labor, rural resource development, social gerontology, technological change, and agricultural and other voluntary associations. Some Field members are based in the Department of City and Regional Planning, the Department of Sociology, and the School of Industrial and Labor Relations. Investigations by Field members conducted in cultural settings outside the United States, in addition to comparative studies using nations as units of analysis, include work in India, Italy, Mexico, the Netherlands, Pakistan, Peru, the Philippines, and Scandinavian countries. The Field includes members who participate in the Cooperative Extension Service and the International Agricultural Development programs of the New York State College of Agriculture, in the Center for International Studies, and in the area programs for Latin America, South Asia, and Southeast Asia. Several of these programs have supported dissertation research overseas.

A data bank initiated in the Department of Rural Sociology provides data on domestic (United States and New York State) and international units. Graduate students are encouraged to use these data in research papers and theses. The Regional History Collection of Olin Library is acquiring an extensive set of material especially useful for the study of rural social movements and farm organizations in the United States.

A bibliography of publications by Department of Rural Sociology staff, which also lists recent doctoral and master's theses by majors in Development Sociology, is available from the Field Representative.

## Requirements for Major and Minor Subjects

**DEVELOPMENT SOCIOLOGY.** The focus of the major in Development Sociology is on rural societies and on the community and regional development of nations. When Development Sociology is offered as a major for the Ph.D., the student is expected to demonstrate: (1) a thorough knowledge of theories of social organization and change and an understanding of the application of these theories to planned change; (2) a knowledge of research in social organization and change, with emphasis on comparative studies of societies and their subsystems in different phases of modernization; and (3) a working knowledge of research methods.

When offered for the M.S. degree or as a minor for the Ph.D. a student is expected to demonstrate a general knowledge of part (1) and of (2) or (3) of the above requirements.

**ORGANIZATION BEHAVIOR AND SOCIAL ACTION.** When offered as a major for the Ph.D. a student is expected to demonstrate (1) a thorough knowledge of theories of organization behavior, of decision making and social action, of leadership strategies, and of techniques of planned change at the organizational, community, and regional levels, with special emphasis on the rural sector of society; (2) a working knowledge of evaluation and research methods; and (3) a working knowledge of theories of social organization and social change.

When offered for the M.S. degree or as a minor for the Ph.D. a student is expected to demonstrate a general knowledge of part (1) of the above requirements and a general knowledge of part (2) with emphasis on evaluation methods and the study of planned change.

**RURAL SOCIOLOGY.** When offered as a major for the Ph.D. a student is expected to demonstrate (1) a thorough knowledge of the sociology of

rural social systems and of the research in this area; (2) a working knowledge of research methods; and (3) a working knowledge of theories of social organization and social change.

When offered for the M.S. degree or as a minor for the Ph.D. a student is expected to demonstrate a general knowledge of part (1) and of (2) or (3) of the above requirements.

**METHODS OF SOCIAL RESEARCH** (Ph.D. minor only). A working knowledge of the logic of science, research design, observational and data collection techniques, and methods of analysis for hypothesis testing is required. For students with a sociologically oriented major, a thorough knowledge of these areas will be required.

**OCCUPATIONAL SOCIOLOGY** (Ph.D. minor only). A thorough knowledge of sociological theory and methods in the empirical study of occupations and professions is required.

## Courses<sup>7</sup>

### 405. ORGANIZATION DYNAMICS

Spring term. Credit three hours. Staff.

A study of the organization theory and the methods and techniques by which organization consultants, officers, group members, and administrators may increase the effectiveness of organizations. Five categories of organization problems are considered: (1) program problems, (2) leadership problems, (3) membership problems, (4) problems related to meetings, and (5) organizational and public relations problems. Primary emphasis is given to organizations and service agencies which are found in rural society. The first hour is a lecture-discussion period; the second hour is a group-skills, group-process, and group-sensitivity laboratory.

### 411. COMMUNITY AND REGIONAL DEVELOPMENT AND PLANNED CHANGE

Spring term. Credit three hours. Mr. Capener and others.

Various strategies of development and planned change will be explored. Reviewed also will be programs, organizations, agencies, and institutions operating in communities and regions that address themselves to various development strategies. Two major emphases are: (1) the structural-functional roles and processes of organizations, agencies, and institutions as they implement programs of change and development in communities and regions, (2) roles of professionals and change agents working in development units.

### 412. RURAL SOCIETY

Fall term. Credit three hours. Mr. Larson.

Intended as a basic course in the sociology of rural life, using the social system concept as a theoretical framework. Rural society in the United States is used as a case to illustrate the structure and function of major rural social systems in modernized societies. Comparisons are made with Western European countries. The changing relationship with urban and societal systems is discussed. Some consideration is given to the implications of social structure and function for action programs serving rural people.

7. Courses listed are offered in the Department of Rural Sociology unless otherwise specified.

**420. COMPARATIVE RURAL SOCIETIES**

Fall term. Credit three hours. Mr. Young.

The development of nations, regions, and communities is analyzed from a macrostructural perspective, emphasizing the pervasive nature of social communication and symbolic transformations. Results of recent and ongoing comparative studies are reported, and previous theoretical work relevant to structural change—Marx, Durkheim, Parsons, etc.—is reviewed.

**421. COMMUNITY STRUCTURE AND CHANGE**

Fall term. Credit three hours. Mr. Erickson.

An overview of various models in approaching communities as objects of study. Analysis will focus on the methodologies by which power structures are examined; the relation of local community units to extracommunity systems; the forms of community cohesion and autonomy; the relation of local power structures to decision making; and the relation of changes in division of labor, urbanization, suburbanization, and values to patterns of community life.

**424. OCCUPATIONAL STRUCTURE IN INDUSTRIAL AND DEVELOPING COUNTRIES**

Fall term. Credit three hours. Mr. Taietz.

Cross-national comparisons of occupational differentiation and related issues. Particular attention will be given to the relation of the occupational structure to social stratification, mobility within the structure, and occupational prestige ranking.

**432. COMMUNITY LEADERSHIP**

Spring term. Credit three hours. Mr. Cummings.

A study of leadership theories and decision-making strategies as applied to community and regional development. The nature of leadership requirements in a political democracy is examined along with implications for leader education in public affairs.

**437. THE SOCIOLOGY OF AGING**

Spring term. Credit three hours. Mr. Taietz.

The theory and research in this growing field will be examined. Programs for the aged in the United States and Western Europe will be evaluated, and the assumptions underlying these programs will be analyzed.

**443. POLITICS, SOCIAL CONTROL, AND PLURALISM**

Fall term. Credit three hours. Mr. Eberts.

Comparative analyses of substantive and methodological issues in social control processes within the political economies of primarily Western democracies, but with illustrative attention to Communist and developing societies. Pluralism and control will be viewed relative to productive, allocative, and staffing processes of society, as they affect various occupational categories, communities of different size, and institutions primarily responsible for maintaining social order.

**500. EVALUATION RESEARCH**

Spring term. Credit two hours. Registration by permission only. Staff.

Evaluation as measurement of induced change resulting from action programs and extension education. Public concern with evaluation. Organizing for evaluation. Kinds and levels of evaluation. Utilizing the findings of evaluation studies and research. The by-products of evaluation. Principal



emphasis on methodology and techniques, including review of significant evaluation studies and research. Course includes laboratory and field work.

#### 511. THE METROPOLITAN COMMUNITY

Fall term. Credit three hours. Mr. Eberts.

An interdisciplinary course focused upon social, political, and economic aspects of metropolitan America. Viewed from the perspectives of demography, ecology, social organization, and planning, the emergence of a new society form and its implications for contemporary America will be considered.

#### 515. RESEARCH DESIGN

Fall term. Credit three hours. Mr. Francis.

An introduction to the methods of social research. Course topics follow the major steps in the design and execution of sociological research from the definition of the problem and formulation of hypotheses to the interpretation of results and preparation of a final report. Practice exercises are assigned each week utilizing data from departmental projects.

#### 516. CROSS-CULTURAL RESEARCH METHODS

Spring term. Credit three hours. Prerequisite: 515 or permission of the instructor. Mr. Young.

The comparative study of large social systems is presented as a new research style that is especially appropriate to research in and on developing countries. The field technique of macrosurveys is considered in detail, but the uses of available data such as national social accounting, documents, ethnographic reports, and aerial photographs are emphasized. Special attention is given to trend studies, the assumptions of macrostructural analysis, rapid, low-cost research procedures, and the mechanics of data archives.

#### 522. SOCIAL POWER AND COMMUNITY DECISION MAKING

Spring term. Credit three hours. Mr. Stockdale.

A sociological approach to power as an aspect of community life. The importance of social power in community decision making and action programs is considered. The influence of community power structures in instigating and retarding change is analyzed. Recent community power studies are reviewed. The methodology and the theoretical approaches of these studies are analyzed.

#### 528. APPLICATIONS OF SOCIOLOGY TO DEVELOPMENT PROGRAMS

Spring term. Credit four hours. Mr. Polson.

Application of sociological theory and methods to the problems of institutions and agencies concerned with rural development. Special emphasis is placed on programs for agricultural extension education and community development in low-income countries.

#### 540. INTRODUCTION TO COMPUTER USE

Fall and spring terms. Credit two hours. Mr. Eberts.

The purpose is to introduce the student who wishes to use the computer in his research, but who does not necessarily want to become a programmer, to the system at Cornell. The course is divided into two parts. The first part is designed to give the student a working knowledge of the elementary aspects of FORTRAN IV so that he will be able to do preliminary transformations of his data and simple FORTRAN programs. The second part deals with the various "canned" programs which are most often used by

social scientists. The student is introduced to program packages such as Michigan, Bimed, and SSP.

550. INFORMAL STUDY IN RURAL SOCIOLOGY

Throughout the year. Credit to be arranged. Members of the staff.

551. RESEARCH IN RURAL SOCIOLOGY

Throughout the year. Credit to be arranged. Members of the staff.

613. SEMINAR: RURAL SOCIOLOGY

Spring term in alternate years. Credit three hours. Mr. Larson.

622. SEMINAR: COMMUNICATION AND SOCIAL SYMBOLICS

Spring term. Credit three hours. Registration by permission. Mr. Young.

624. SEMINAR: SOCIETAL STRESSES

Spring term. Credit three hours. Mr. Eberts.

630. SEMINAR: CONTEMPORARY SOCIAL THEORY I

Fall term. Credit three hours. Mr. Reeder.

631. SEMINAR: CONTEMPORARY SOCIAL THEORY II

Spring term. Credit three hours. Mr. Reeder.

635. THE SOCIOLOGY OF AGRARIAN MODERNIZATION AND DEVELOPMENT

Fall term. Credit three hours. Staff.

636. SEMINAR: SOCIAL CHANGE AND DEVELOPMENT

Spring term. Credit three hours. Mr. Erickson.

642. FIELD PROBLEM IN PLANNING: URBAN/RURAL POVERTY

Spring term. Credit four hours. Prerequisite: any two of the following courses or consent of the instructors; 443, 421; Agricultural Economics 650; Planning 580, 620, 660. Messrs. Clavel and Eberts.

651. SEMINAR: OCCUPATIONAL STRUCTURE

Spring term. Credit three hours. Mr. Bauder.

For descriptions of the following courses, see the appropriate Field listing in this *Announcement*.

ILR 620. SEMINAR ON PERSONALITY AND ORGANIZATION

Spring term. Credit three hours. Mr. L. K. Williams.

ILR 622. CROSS-CULTURAL STUDIES OF WORK AND INSTITUTIONAL DEVELOPMENT

Fall term. Credit three hours. Messrs. Whyte and L. Williams.

PLANNING 412. INTRODUCTION TO HUMAN ECOLOGY

Fall term. Credit three hours. Mr. Feldt.

SOCIOLOGY 541. SOCIAL ORGANIZATION AND CHANGE

Fall term. Credit four hours. Mr. R. Williams.

## ECONOMICS

Faculty: George P. Adams, Jr., Gary Bickel, Nai-Ruenn Chen, M. Gardner Clark, Tom E. Davis, Melvin de Chazeau, Douglas F. Dowd, W. Duane Evans, Louis M. Falkson, Heywood Fleisig, Walter Galenson, Frank H. Golay, George M. Hildebrand, Paul Hohenberg, John G. B. Hutchins, Alfred E. Kahn, Robert W. Kilpatrick, Jay H. Levin, Ta-Chung Liu, John W. Mellor, Leonard Mirman, Chandler Morse, Dennis Mueller, George J. Staller, S. C. Tsiang, Jaroslav Vanek, George M. von Furstenburg.

Field Representative: George J. Staller, Goldwin Smith Hall.

Advisers to entering graduate students: Jay Levin and Dennis Mueller, Goldwin Smith Hall.

## MAJOR AND MINOR SUBJECTS

Econometrics and Economic Statistics	History of Economic Thought
Economic Development and Planning	Industrial Organization and Control
Economic History	International Economics
Economic Theory	Labor Economics
Economics of Participation and Labor-Managed Systems	Monetary and Financial Economics
	Public Finance and Fiscal Policy

All candidates resident in the United States during the year preceding matriculation at Cornell must take the Graduate Record Examination Aptitude Test; it is also recommended that such candidates take the GRE Advanced Test in Economics. There are no fixed admission requirements. However, grades, class standing, GRE scores, and letters of recommendation, considered collectively, must indicate superior scholastic ability and motivation.

Students majoring in this Field should consult the descriptions in this *Announcement* of the Fields of Agricultural Economics, Business and Public Administration, City and Regional Planning, and Industrial and Labor Relations for other subjects related to the work in economics. Attention is also directed to the various International Studies programs, including the Program on Comparative Economic Development, described on p. 35 in this *Announcement*.

In addition to their major and two minors, doctoral candidates will be required to demonstrate competence in economic theory, its history, and its methodology, the latter including economic statistics, and (except when the chairman of the Special Committee explicitly approves an exemption) mathematical economics. A student who elects as a major or minor any of these required subjects must broaden his program by taking work in additional subjects approved by his Special Committee.

Candidates for the Ph.D. degree with a major in Economics are encouraged to elect one minor subject in another Field.

All candidates for advanced degrees who elect a minor in Economics will be held responsible for work in economic theory and its history.

Applications for fellowships and scholarships in Economics should be filed with the Dean of the Graduate School prior to the deadline date (see Calendar). Applications for teaching fellowships, however, should be made directly to the chairman of the Department of Economics.

The Field of Economics has no general language requirements. The

chairman of the Special Committee will determine what languages, if any, the student is expected to master.

Within his first year of residence each Ph.D. candidate in the Field of Economics must pass an oral qualifying examination administered by his Special Committee. The purpose of this examination is to determine the student's qualification to pursue all aspects of a Ph.D. program. A member of the Special Committee who is satisfied with the student's qualifications in the subject which the member represents may pass him in that subject without formal testing. On the basis of the qualifying examination, the Special Committee, with the student, will work out his graduate program. Other examinations required by the Graduate School are described on pp. 11-12 of this *Announcement*.

The Field requires that each graduate student (unless specifically exempted by the Field Representative) be available to serve at least one term as a teaching assistant during his period of residence.

## Faculty Specializations

Econometrics and Economic Statistics: Bussmann, Evans, Liu, Long, Miovic, Mirman.

Economic Development and Planning: Bickel, Burton, Clark, Davis, Golay, Hohenberg, Mellor, Morse, Staller, Vanek.

Economic History: Chen, Davis, Dowd, Fleisig, Hohenberg, Hutchins.

Economic Theory: Adams, Bickel, Burton, Kilpatrick, Levin, Liu, Miovic, Mirman, Mueller, Tsiang, von Furstenburg.

History of Economic Thought: Adams, Hildebrand.

Industrial Organization and Control: de Chazeau, Kahn, Long, Mueller.

International Economics: Davis, Golay, Hohenberg, Levin, Morse, Staller, Tsiang, Vanek.

Labor Economics: Galenson, Hildebrand.

Monetary and Financial Economics: Davis, Tsiang.

Public Finance and Fiscal Policy: Kilpatrick, von Furstenburg.

## Graduate Courses and Seminars

The following course listings are tentative, intended for the student's information. The Department office should be contacted for definite course offerings, times, places, etc.

### 510. THE THEORY OF HOUSEHOLD AND THE FIRM

Fall term.

### 511. THE THEORY OF MARKETS AND GENERAL EQUILIBRIUM

Spring term.

### 512. MACROECONOMIC THEORY

Fall and spring terms. Prerequisite: consent of the instructor.

Analysis of the determination of national income, the price level, and economic growth.

### 513. PRICE AND ALLOCATION THEORY

Fall term.

100 ECONOMICS

517-518. INTERMEDIATE MATHEMATICAL ECONOMICS I AND II

Throughout the year.

519-520. QUANTITATIVE METHODS

Throughout the year.

521-522. EUROPEAN ECONOMIC HISTORY

Throughout the year.

523. AMERICAN ECONOMIC HISTORY

Fall term.

525. ECONOMIC HISTORY OF LATIN AMERICA

Fall term.

527. THE ENVIRONMENT OF ECONOMIC ACTIVITY IN POSTWAR EUROPE

Fall term.

529. ECONOMIC HISTORY OF EARLY MODERN EUROPE

Fall term.

561-562. INTERNATIONAL ECONOMIC THEORY AND POLICY

Throughout the year.

565. ECONOMIC PROBLEMS OF LATIN AMERICA

Spring term.

571. ECONOMIC DEVELOPMENT AND SOCIOPOLITICAL MODERNIZATION

Spring term.

572. ECONOMIC GROWTH AND DEVELOPMENT

Spring term.

575. ECONOMICS OF POVERTY

Fall term.

611. ADVANCED MICROECONOMIC THEORY

Fall term.

612. ADVANCED MACROECONOMIC THEORY

Spring term.

613-614. HISTORY OF ECONOMIC THOUGHT

Throughout the year.

615. BUSINESS CYCLES AND GROWTH

Fall term.

617-618. MATHEMATICAL ECONOMICS

Throughout the year.

## 619-620. ECONOMETRICS

Throughout the year.

## 621-622. EUROPEAN ECONOMIC HISTORY

Throughout the year.

## 623. AMERICAN ECONOMIC HISTORY

Fall term.

625. SELECTED PROBLEMS IN THE HISTORY OF THE  
INTERNATIONAL ECONOMY 1800-1939

Fall term.

## 631-632. MONETARY THEORY AND POLICY

Throughout the year.

635-636. PUBLIC FINANCE: RESOURCE ALLOCATION AND  
FISCAL POLICY

Throughout the year.

## 641-642. LABOR ECONOMICS

Throughout the year.

## 651-652. INDUSTRIAL ORGANIZATION AND REGULATION

Throughout the year.

661-662. INTERNATIONAL ECONOMICS: PURE THEORY AND  
POLICY

Offered in alternate years.

663-664. INTERNATIONAL ECONOMICS: BALANCE OF PAYMENTS  
AND INTERNATIONAL FINANCE

Offered in alternate years.

## 666. SPECIAL TOPICS IN INTERNATIONAL FINANCE

Spring term.

## 671-672. ECONOMICS OF DEVELOPMENT

Throughout the year.

673. THEORY AND PRACTICE OF LABOR-MANAGED MARKET  
ECONOMIES

Fall term.

## 674. ECONOMIC PLANNING

Spring term.

## 675. ECONOMIC GROWTH MODELS

Fall term.

## 676. THE ECONOMY OF CHINA

Spring term.

## 678. ECONOMIC GROWTH IN SOUTHEAST ASIA

Spring term.

679. THEORY OF ECONOMIC DEVELOPMENT

Spring term. Prerequisite: 675.

685. SEMINAR IN MATHEMATICAL ECONOMICS (Mathematics 679)

Spring term.

ILR 610. SEMINAR IN ECONOMIC STATISTICS

Fall term.

## EDUCATION

Faculty: Barry Adams, Howard G. Andrus, Joe P. Bail, Alfred L. Baldwin, Arthur L. Berkey, Sara E. Blackwell, Robert L. Bruce, Ralph N. Campbell, Harold R. Cushman, Robert Davis, Robert E. Doherty, William E. Drake, Arthur E. Durfee, Joan R. Egner, Robert H. Ennis, Jean Failing, Richard B. Fischer, Felician F. Foltman, Harrison A. Geiselmann, Marvin D. Glock, D. Bob Gowin, Emil J. Haller, John S. Harding, Dalva E. Hedlund, Peter J. Hilton, Lawrence B. Hixon, Irene I. Imbler, J. Paul Leagans, Harry Levin, George W. McConkie, Jason Millman, Marion E. Minot, A. Gordon Nelson, Helen Y. Nelson, Benjamin Nichols, Joseph D. Novak, Walter J. Pauk, Isabel J. Peard, Kathleen Rhodes, Richard E. Ripple, Verne N. Rockcastle, Frederick H. Stutz, Frederick K. T. Tom, Helen L. Wardeberg.

Field Representative: Frederick K. T. Tom, 202 Stone Hall.

### MAJOR AND MINOR SUBJECTS

Agricultural Education  
Curriculum and Instruction  
Development of Human Resources  
Education (minor subject only)  
Educational Administration  
Educational Psychology and  
Measurement  
Extension and Adult Education

Guidance and Student Personnel  
Administration  
History, Philosophy, and Sociology  
of Education  
Home Economics Education  
Science, Nature and Conservation  
Education

The Graduate Field of Education is engaged in both the study of education and the preparation of professional practitioners. Its concern includes educational aims, objectives, learning theory, curriculum, instruction, educational organization, and administration.

**ADMISSION REQUIREMENTS.** All applicants for admission with majors in Education—M.A., M.S., M.A.T., Ed.D., Ph.D.—who are residents of the United States or Canada and whose native language is English, are required to submit with their application either a score from the Graduate Record Examination Aptitude Test or the scores of both the Miller Analogies Test and the Doppelt Mathematical Reasoning Test. The GRE score is necessary for university fellowship applications. Location of test centers can be obtained by writing the Testing and Service Bureau, Olin Hall.

**FINANCIAL AID.** Information on scholarships, research assistantships, and teaching assistantships available in the Field, and application forms, may be obtained from: Secretary, Field of Education, 100 Stone Hall. Applications for general university fellowships must be received no later than February 1. Applications for assistantships, USOE Title IV Traineeships, and other

restricted awards of the Field of Education must be received no later than March 15. Notification of all awards can be expected by April 1. Information about teacher associateships available to students in the M.A.T. program may be obtained by writing the Office of Teacher Preparation, 201 Rand Hall.

**GRADUATE DEGREES.** Students majoring in the Field of Education may be admitted for either of two types of advanced degrees: the *general degrees* of M.A., M.S., and Ph.D., administered by the Graduate School, and the *professional degrees* administered by the Field of Education of the Graduate School (see also pp. 27-28 of this *Announcement*.)

## General Degrees

The differences between the general degree programs and those of the professional degrees relate to the manner of meeting residence requirements, the emphasis on research, the specification of hours of credit required, the selection of major and minor subjects, and the program of studies.

**LANGUAGE REQUIREMENT.** The language requirement for the degree of Ph.D. is left to the discretion of the candidate's Special Committee; none is required for the M.A. or M.S. Residence requirements are described on pp. 9-11 of this catalog.

## Professional Degrees

Advanced professional degrees in education are designed as preparation for the professions in education. Two professional degrees, Master of Arts in Teaching and Doctor of Education, are awarded.

It is the responsibility of the candidate to become familiar with the various regulations which apply to his degree candidacy and to satisfy them in the proper manner. The general regulations are contained in the *Code of Legislation of the Graduate Faculty, Cornell University*; specific requirements and/or exceptions to the general regulations are to be found in the *Education Announcement*.

### MASTER OF ARTS IN TEACHING (M.A.T.)

The degree of Master of Arts in Teaching (M.A.T.) is designed for those with a baccalaureate degree, planning to undertake professional preparation in the fifth year. Teaching areas for this degree include agriculture, biology, chemistry, earth science, English, French, German, home economics, Latin, mathematics, physics, Russian, history and social sciences, and Spanish. Graduates of a teacher-training program ordinarily are not eligible for this degree.

**ADMISSION.** Applicants must have adequate preparation in their intended teaching field, ability to pursue graduate study, and must give evidence of a serious career interest in teaching.

**RESIDENCE.** A minimum of two and two-fifths residence units is required. Residence units may be earned in: (1) academic-year registration, (2) summer registration, and (3) extramural registration. Full-time study will be required in all but exceptional cases.



**SPECIAL COMMITTEE.** A candidate will select a Special Committee of two or more members of the Graduate Faculty, one of whom will represent the Field of Education and serve as chairman. The chairman normally will belong to one of the teacher preparation specializations. Other members of the Committee are to be selected with the advice of the chairman to give adequate representation of the candidate's program. For a candidate preparing for secondary school teaching, the teaching field will be represented.

**PROGRAM OF STUDIES.** The program determined by the candidate and his Special Committee will include those courses, seminars, and other experiences in the professional area and in the teaching field or fields which are deemed most appropriate. Each candidate will be required to demonstrate teaching skills in a supervised field experience.

**EXAMINATION.** The final examination is conducted by the Special Committee and may be written or oral or both. It shall be comprehensive and designed to evaluate the candidate's knowledge in the teaching field as well as in the theory and practice of teaching.

## DOCTOR OF EDUCATION (Ed.D.)

Programs for this degree are designed to prepare the candidate for positions of leadership in the educational profession, including administrator, coordinator, curriculum specialist, extension specialist, student services specialist, supervisor, and teacher.

**ADMISSION.** Applicants must have completed a minimum of three years of successful experience appropriate to their proposed field of professional service and must show evidence of scholastic ability and other qualifications necessary for successful progress in graduate study, field experience, and professional work.

**RESIDENCE.** A minimum of five units of residence is required beyond the Bachelor's degree, of which at least three units must be earned in residence at Cornell. Two units of residence beyond the Master's degree or its equivalent must be earned at Cornell in regular terms, consecutive except on petition. No more than two units may be earned through extramural registration or in summer sessions at Cornell or elsewhere.

In addition to meeting residence requirements, a candidate must complete successfully one year of participation in Directed Field Experience (see below).

**PROGRAM OF STUDIES.** The program of studies must include a minimum of sixty-five credit hours in courses and seminars beyond the Bachelor's degree, of which thirty-five hours shall be completed beyond the Master's degree or its equivalent. It includes advanced work in each of these subjects: educational psychology, history and philosophy of education, educational measurement and statistics, and research in education. At least fifteen hours of credit must be earned in courses other than those in professional education.

The transfer of credit earned in institutions other than Cornell University must be recommended by the Special Committee and approved by the dean of the Graduate School.

**DIRECTED FIELD EXPERIENCE.** In keeping with the primary emphasis in the program for the Ed.D. degree, a minimum of two consecutive academic

terms of full-time experience appropriate to the candidate's field of professional service is required. This Directed Field Experience will follow completion of two units or more of residence at Cornell beyond the Master's degree or its equivalent.

The opportunity for the Field Experience is to be sought by the candidate with the advice and assistance of the Special Committee. The proposed plan must be approved by the Committee as affording those practical experiences needed in acquiring competence in his intended field of professional service.

**THESIS.** The candidate is required to present a thesis which will give evidence of his ability to apply knowledge to a professional problem. The thesis must satisfy the Special Committee in respect to both professional proficiency and literary quality.

**EXAMINATIONS.** Two examinations are required: (1) an Admission to Candidacy Examination and (2) a two-part Final Examination. Although other members of the faculty may be invited to participate in these examinations, the Special Committee alone decides whether the candidate has passed or failed. The Admission to Candidacy Examination is both written and oral and is given before or during the third unit of residence. It has the double purpose of determining the ability of the candidate to pursue further studies and of allowing the Special Committee and the candidate to plan a satisfactory program. The Final Examination is given by the Special Committee and other members of the faculty who may be invited to attend. The examination must be given in two parts—one part on the field of professional service and core studies in education (Examination A), which may be taken at the end of the fourth unit of residence; and a second part on the thesis (Examination B), taken after the thesis is approved by the Special Committee. Examination A may be written or oral or both. Examinations A and B may precede or follow the period of Directed Field Experience.

## The Major Subjects in Education

The professional opportunities, areas of study and research, and courses for each of the major subjects in Education are listed below.

### AGRICULTURAL EDUCATION

Joe P. Bail, Arthur L. Berkey, Harold R. Cushman, William E. Drake, Frederick K. T. Tom.

Candidates for any advanced degree are expected to have extensive undergraduate preparation in agriculture. Teaching experience is desirable for all candidates and required for admission at the doctoral level.

The graduate program in agricultural education prepares the student for positions in teaching, research, supervision, and administration in public schools, technical schools, and colleges and universities; and for careers in state and federal educational agencies or in overseas educational programs.

Current research projects include the areas of curriculum, occupational work experience, adult education, job analysis and opportunities, learning systems, and teacher education.

**332. METHODS, MATERIALS, AND DIRECTED PRACTICE IN TEACHING AGRICULTURE IN THE SECONDARY SCHOOL**

Fall term. Credit nine hours. Staff.

Direct participation in off-campus centers in the specific and related problems of teaching agriculture on the junior and senior high school levels which include adjustment in the school and community; evaluation of area resources, materials of instruction, and school facilities; organization and development of local courses of study; launching and directing supervised farming programs; planning for and teaching all-day classes; advising Future Farmers chapters; and other problems relating to development of a balanced program for vocational education in agriculture in a local area.

**433. SPECIAL PROBLEMS IN AGRICULTURAL EDUCATION**

Fall or spring term. Credit one or two hours. Mr. Bail and staff.

The purpose is to provide students an opportunity to study, individually or as a group, selected problems in agricultural education to meet the particular needs of the students.

**434. ORGANIZATION AND DIRECTION OF YOUNG FARMER PROGRAMS**

Fall term. Credit three hours. Mr. Cushman.

Emphasis will be placed on problems such as making arrangements to have a young farmer program, determining instructional needs and planning programs of instruction, teaching young farmers in groups, giving individual on-farm instruction, organizing and advising the local young farmer association, and evaluating the young farmer program.

**531. SUPERVISION IN AGRICULTURAL EDUCATION**

Fall term. Credit two hours. Given in alternate years. Open to students with experience in teaching agriculture, or by permission. Mr. Bail.

The function of supervision, program planning, and supervisory techniques as applied to state programs in agricultural education.

**532. ADVANCED METHODS AND MATERIALS OF TEACHING AGRICULTURE**

Fall term. Credit two or three hours. Mr. Tom.

Consideration is given to selected teaching techniques and to the selection, preparation, and use of instructional materials in agriculture.

**533. PLANNING COURSES OF STUDY AND AGRICULTURAL EXPERIENCE PROGRAMS**

Spring term. Credit three hours. Mr. Drake.

Guiding principles, objectives, and sources of information will be developed for planning the courses of study and teaching calendar. Consideration will be given to principles, meanings, and functions of agricultural experience programs and how they are planned, developed, and used.

**534. EDUCATION FOR LEADERSHIP OF YOUTH AND ADULT GROUPS**

Fall term. Credit two hours. Mr. Cushman.

A consideration of the principles involved in organizing and conducting out-of-school programs for youth and adults.

**535. PLANNING AND CONDUCTING PROGRAMS OF TEACHER PREPARATION IN AGRICULTURE**

Fall term. Credit two hours. Offered in alternate years. Mr. Tom. Open to

persons with teaching experience in agriculture who are preparing for or engaged in the preparation of teachers or in related educational service.

#### 536. ORGANIZATION AND ADMINISTRATION OF AGRICULTURAL EDUCATION

Spring term. Credit two hours. Given in alternate years. Mr. Cushman.

Designed for teachers, high school principals, teacher trainers, supervisors, and others who are or wish to become administrators of agricultural programs. Emphasis will be placed on interpreting the vocational acts and on problems of administration at the local and state level.

#### 539. EVALUATING PROGRAMS OF AGRICULTURAL EDUCATION

Spring term. Credit two hours. Given in alternate years. Open to students with experience in teaching agriculture or by permission. Mr. Drake.

Students will study objectives, evaluate and develop criteria and procedures for evaluation of programs of agricultural education in the secondary schools.

#### 630. SEMINAR IN AGRICULTURAL EDUCATION

Spring term. Credit one hour. Mr. Bail.

Recommended for Master's degree candidates who have had teaching experience and doctoral candidates with majors and minors in agricultural education. The seminar will be primarily centered in current problems and research in the field not included in other course work.

### CURRICULUM AND INSTRUCTION

Harrison A. Geiselman, Peter J. Hilton, Joseph D. Novak, Walter J. Pauk, Miss Isabel J. Peard, Verne N. Rockcastle, Miss Helen L. Wardeberg.

The Master of Arts in Teaching degree is offered for liberal arts graduates with appropriate disciplinary concentrations who desire supervised teaching practice and the related professional studies required for permanent certification as elementary school teachers or secondary school teachers of academic subjects. The Master of Arts degree is intended for experienced teachers who seek advanced study in education and in their teaching fields. Doctoral candidates will find opportunities for research in scholarship; teacher education; supervision and evaluation of teaching; instructional methodology and media; curriculum theory; and curriculum development in reading, social studies, mathematics, and the humanities. All degree programs include continuing work in academic disciplines in addition to professional study.

#### 440A. OBSERVATION AND STUDENT TEACHING

Fall or spring term. Credit six hours. Mr. Holman, Mrs. Ocvirk, Mr. Pfaff, Mr. Teetor.

For students preparing to teach English, languages, mathematics, or social studies in the secondary school. (Prospective science teachers, see Ed. 409. Students should also enroll in the appropriate special methods course.)

#### 440L. TEACHING LANGUAGES IN SECONDARY SCHOOLS

Fall or spring term. Credit three hours. Mr. Teetor.

#### 440M. TEACHING MATHEMATICS IN SECONDARY SCHOOLS

Fall or spring term. Credit three hours. Mr. Holman.

440S. TEACHING SOCIAL STUDIES IN SECONDARY SCHOOLS

Fall or spring term. Credit two or three hours.

444. SEMINAR IN THE TEACHING OF SECONDARY MATHEMATICS

Spring term. Credit three hours. Mr. Geiselman.

Useful materials and practical methods for effective teaching of mathematics in the junior and senior high school. Attention will be given to research in mathematics education, recent proposals for curriculum revision, and topics suggested by special interests of the students.

445. TEACHING READING AND STUDY SKILLS IN SECONDARY SCHOOLS

Spring term. Credit two or three hours. Mr. Pauk.

For teachers, administrators, guidance counselors, and supervisors. Pertinent research as well as the psychology and philosophy of developmental reading and study skills will be examined. Teaching methods and sample materials for classroom use will be demonstrated and discussed.

540. THE ART OF TEACHING

Fall and spring terms. Credit and hours to be arranged. Prerequisite: consent of appropriate supervisor. Mr. Geiselman and Miss Peard.

For students enrolled in fifth-year teacher education programs. Students will be assigned to elementary and secondary schools for directed field experiences. Seminars will be scheduled concurrently.

545. THE CURRICULUM OF AMERICAN SCHOOLS

Fall term. Credit three hours.

A survey of the basic elements involved in making curriculum decisions, and an examination of contemporary curriculum developments in elementary and secondary schools.

546. TEACHING READING AND LANGUAGE SKILLS

Fall term. Credit three hours. Miss Wardeberg.

Materials and techniques in teaching the language arts in the elementary schools; special emphasis on the teaching of reading.

547. SEMINAR IN ELEMENTARY EDUCATION

Spring term. Credit and hours as arranged. Miss Wardeberg.

To study current problems and research in this field.

549. MODERN MATHEMATICS FOR THE ELEMENTARY TEACHER

Fall term. Credit three hours. Mr. Geiselman.

An introduction to the new topics, materials, and techniques which are reflected in modern mathematics curricula, grades K-6.

645. SEMINAR IN CURRICULUM THEORY AND RESEARCH

Spring term. Credit three hours. Registration by permission of the instructor.

EDUCATIONAL ADMINISTRATION

Mrs. Joan R. Egner, Emil J. Haller, Lawrence B. Hixon, Miss Helen L. Wardeberg.

For a major in this subject, the candidate must demonstrate proficiency in the following areas of knowledge: (a) theoretical concepts of administration,

(b) the basic disciplines which deal with the relationships between individuals and groups within an organization and between organizations, (c) research in educational administration, and (d) environmental factors which influence the educational enterprise.

#### 561. THEORY AND PRACTICE OF ADMINISTRATION

Fall term. Credit three hours. Mrs. Egner.

The goal is to give understanding and practice in the use of behavioral science concepts for analyzing human behavior in formal organizations.

#### 562. THE PRINCIPALSHIP

Spring term. Credit three hours. Mr. Hixon and staff.

Analysis will include the elementary and secondary school as institutions, innovation in organization and curriculum, personnel administration, and community relationships. Each student will specialize at the elementary or secondary school level for an individually planned program of intensive study.

#### 563. SOCIAL CONTEXT OF EDUCATIONAL ADMINISTRATION

Spring term. Credit three hours. Mr. Haller.

A course on environmental factors which influence administrative behavior in formal organizations from three perspectives: a structural approach, centering on the links between the status divisions of society and organizations; a political approach, examining power relations between organizations and their environment; and a cultural perspective, examining the role of norms, values, and ideologies in organizational behavior. Students will conduct and report on a small-scale, empirical research project.

#### 564. ECONOMIC ISSUES IN EDUCATION

Spring term. Credit three hours. Staff.

Introduction to problems of resource procurement and allocation, with focus on existing and alternative strategies of fiscal support for schools and new management techniques for allocating such resources.

#### 565. SUPERVISION OF INSTRUCTION

Spring term. Credit three hours. Open to those already in supervisory positions and experienced persons aspiring to become supervisors. Miss Wardeberg.

A basic course in supervision; fundamental principles and various procedures will be considered.

#### 567. EDUCATION LAW

Fall term. Credit three hours. Mr. Hixon.

Review and analysis of federal and state legislation, court decisions, opinions, and regulations which affect educational institutions.

#### 569. PERSONNEL ADMINISTRATION

Fall term. Credit three hours. Mrs. Egner.

An introduction to modern psychological and sociological perspectives of personnel administration. The purposes are to acquaint the student with a variety of ways of conceiving the problems of personnel administration, with relevant research, and to develop some facility in the analysis of conceptual schemes and research projects.

668. SEMINAR IN EDUCATIONAL ADMINISTRATION

Spring term. Credit three hours. Prerequisite: 561 or 569 or consent of instructor. Mrs. Egner and staff.

## EDUCATIONAL PSYCHOLOGY AND MEASUREMENT

Howard G. Andrus, Marvin D. Glock, D. E. Hedlund, Harry Levin, George W. McConkie, Jason Millman, A. Gordon Nelson, Richard E. Ripple.

Educational psychology is a behavioral science. Its concepts and principles comprise the body of knowledge relevant to the improvement of classroom learning. Many disciplines—including anthropology, child development, psychology, and sociology—contribute to educational psychology through their research findings on the nature of growth and development, cognition, motivation, social interaction, and personality. Students who major in this subject may specialize in any of the traditional aspects of psychology as they apply to human behavior or statistics. Research in progress is in the field of human learning and literacy. Previous preparation in professional education or in psychology is not a prerequisite. Any deficiencies must be satisfied during candidacy for a particular degree.

### 411. EDUCATIONAL PSYCHOLOGY

Fall or spring term. Credit three hours. Prerequisite: an introductory course in psychology. Designed for students preparing to teach. Fall term, Mr. Ripple; spring term, Mr. Glock. Special section for agricultural education majors, fall term, Mr. Glock. (Equivalent to Psychology 103).

Consideration of the outstanding facts and principles of psychology bearing upon classroom problems.

### 417. PSYCHOLOGY OF ADOLESCENCE

Spring term. Credit three hours. Prerequisite: a course in general psychology. Mr. Ripple.

A survey of the nature of adolescent growth and development with emphasis on some of the causal factors pertaining to adolescent behavior.

### 452. INTERPRETATION OF STATISTICS USED IN EDUCATION

Fall term. Credit one hour. Will be offered in the spring term only to those students concurrently enrolled in 453. Mr. Millman.

A brief introduction to the vocabulary and symbolism used in reporting empirical research in education. Both univariate and multivariate statistical procedures will be covered from an intuitive point of view.

### 453. INTRODUCTION TO EDUCATIONAL STATISTICS

Spring term. Credit three hours. Prerequisite: 452 (may be elected concurrently), or permission of the instructor. Mr. Millman.

A study of common statistical procedures encountered in educational literature and research. The course includes the mathematical bases, computation, and interpretation of univariate and multivariate descriptive and inferential statistics.

### 511. EDUCATIONAL PSYCHOLOGY

Fall term. Credit three hours. Permission of the instructor required. Mr. Ripple.

A basic course in educational psychology for graduate students.

**551. EDUCATIONAL MEASUREMENT**

Spring term. Credit three hours. Permission of the instructor required. Mr. Glock.

A study of the construction of achievement tests and of the use of aptitude tests, achievement tests, and other measuring instruments in the classification and guidance of pupils and improvement of instruction.

**555. USE AND INTERPRETATION OF TESTS IN GUIDANCE AND PERSONNEL ADMINISTRATION**

Fall term. Credit three hours. Mr. Andrus. Open to students in guidance or personnel administration and to classroom teachers who expect to work with standardized group tests.

Deals with the historical development, use, and interpretation of aptitude tests as a basis for guidance and selection in public schools, colleges, and/or industry. Designed to meet the New York State certification requirements for guidance counselors.

**599. METHODS OF EDUCATIONAL INQUIRY**

Fall and spring terms. Credit three hours. Not offered every spring. Prerequisite: one course in statistics or concurrent registration in 452. Mr. Millman and staff.

An introduction to research methods, with emphasis upon describing and analyzing such procedures as forming concepts, developing educational products, making observations and measurements, performing experiments, building models and theories, providing explanations, and making predictions. For graduate students in the their first year of residence.

**613. SEMINAR IN EDUCATIONAL PSYCHOLOGY**

Fall term. Credit three hours. Permission of the instructor required. Mr. Glock. Primarily for doctoral students.

**616. SEMINAR IN EDUCATIONAL RESEARCH**

Fall term. Credit three hours. Prerequisite: 453 and 599 or permission of the instructor. Mr. Millman.

The topic studied is the design of educational experiments. It emphasizes the design of controlled, comparative experiments for the purpose of testing hypotheses, establishing relationships, evaluating innovations, etc. After reading and discussing a rather extensive core of the relevant literature, students present papers in which specific experimental design consideration is viewed in the context of a class of educational experiments.

**617. SEMINAR IN VERBAL LEARNING**

Fall term. Credit three hours. Prerequisite: Psychology 306 or equivalent. Mr. McConkie.

Current issues in the learning, retention, and transfer of verbal materials.

**618. SEMINAR IN EDUCATIONAL PSYCHOLOGY**

Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Ripple.

Emphasis on theoretical considerations of various areas in educational psychology. Primarily for doctoral students. Not designed for project students earning a Master's degree.

**PSYCHOLOGY 103. EDUCATIONAL PSYCHOLOGY**

Spring term. Credit three hours. Prerequisite: an introductory course in psychology. Mr. Levin. (Equivalent to Education 411).



See courses listed in Psychology, Human Development and Family Studies, Anthropology, Sociology, and Industrial and Labor Relations for related offerings.

## EXTENSION AND ADULT EDUCATION

Robert L. Bruce, Arthur E. Durfee, J. Paul Leagans.

The program leads to both the M.S. and Ph.D. degrees. It is designed to prepare administrators, supervisors, trainers, and other specialists for creative leadership positions in extension, adult and higher education, community development, and other continuing education agencies, and enable them to initiate, organize, and effectively execute such programs in different environments, both in the United States and abroad. The curriculum is interdisciplinary. Individual study plans are developed through personal counseling. Theory, technology, principles, and methodology central to the continuing education process are covered in divisional courses and seminars, and students integrate study in a number of supporting disciplines around this nucleus.

Faculty and student research focuses on the structure of organizations, the design of programs, and the communication process. For further information, write to the chairman of the Division of Extension and Continuing Education, 109 Stone Hall.

### 522. EDUCATING FOR COMMUNITY ACTION

Spring term. Credit three hours. Mr. Bruce.

The design and execution of the educational aspects of community action programs, including cooperative extension.

### 523. ADMINISTRATION AND SUPERVISION OF EXTENSION AND ADVISORY PROGRAMS

Fall term. Credit three hours. Mr. Bruce.

An application of principles of administration and supervision to the problems of organizing and operating informal education and development programs.

### 524. DESIGNING PROGRAMS OF DEVELOPMENTAL CHANGE

Fall term. Credit three hours. Mr. Leagans.

A study of the problems, principles, and general procedures commonly involved in developing and carrying out successful educational programs to promote economic and social change.

### 525. COMMUNICATING TECHNOLOGY

Spring term. Credit three hours. Mr. Leagans.

Designed to give a comprehensive understanding of theory, principles, procedures, and techniques related to the communication of technology as applied to extension, adult, and community development programs. Analysis of basic elements in the communications process with emphasis on the nature and role of the communicator, audience, message channels, message treatment, and audience response.

### 621. SPECIAL STUDIES IN EXTENSION EDUCATION

Fall term. Credit two hours. Messrs. Leagans and Bruce.

The objective is to provide assistance in thesis preparation. The course consists of three parts: (1) exploration of potential fields and specific delin-

education of thesis areas; (2) setting up a plan of thesis organization including establishment of objectives or hypotheses, preparation of questionnaires or other research instruments, collection, analysis, and interpretation of data; and (3) preparation of the thesis, its writing, editing, revising, and styling.

#### 626. SEMINAR: COMPARATIVE EXTENSION EDUCATION SYSTEMS

Fall term. Credit two hours. Mr. Leagans.

A comparative analysis of the objectives, organization, procedures, achievements, and problems of selected extension education and community development agencies and programs in different circumstances of economic, social, and political development and in different agricultural resource environments. Country programs for major consideration are selected in line with the interests of seminar members.

#### 627. SEMINAR: IMPLEMENTING EXTENSION AND COMMUNITY DEVELOPMENT PROGRAMS IN DEVELOPING COUNTRIES

Spring term. Credit two hours. Open to advanced students with experience in rural development programs by permission of the instructor. Mr. Leagans.

Analysis of major problems of implementing programs for economic and social change in non-Western cultures. Key problems including administrative organization and policy, selection and training of personnel, setting objectives and goals, financing programs, communication, and evaluation will be considered along with others suggested by seminar members.

#### 628. SEMINAR: CURRENT PROBLEMS AND ISSUES IN EXTENSION EDUCATION

Spring term. Credit two hours. Open by permission of instructor. Mr. Bruce.

### GUIDANCE AND STUDENT PERSONNEL ADMINISTRATION

Howard G. Andrus, Dalva E. Hedlund, A. Gordon Nelson.

A major in this subject area is appropriate for students who wish to prepare for positions in counseling, student personnel administration in higher education, and counselor education. A candidate who intends to become a public school counselor must include in his program the courses specified for certification in the state where he expects to work. A doctoral candidate is required to complete one minor in some branch of psychology, and a second minor chosen in consultation with the chairman of his Special Committee.

#### 580. STUDENT CULTURE IN THE AMERICAN COLLEGE

Spring term. Credit three hours. Prerequisite: consent of the instructor. Mr. Hedlund.

A study of the student culture with emphasis on current research.

#### 581. STUDENT PERSONNEL ADMINISTRATION

Fall term. Credit three hours. Prerequisite: consent of the instructor. Mr. Hedlund.

Analysis of objectives, function, and organization of student personnel services in higher education. Emphasis on behavioral science theories supporting student personnel administration.

582. EDUCATIONAL AND VOCATIONAL GUIDANCE

Fall term. Credit two hours. For graduate students only. Mr. Nelson.

Principles and practices of educational and vocational guidance. Historical and theoretical background of the guidance movement; educational, vocational, and community information needed; the study of the individual; group methods; counseling; placement and follow-up; and the organization, administration, and appraisal of guidance programs.

583. COUNSELING

Spring term. Credit two hours. Prerequisite: 555 and 582 or equivalent. Mr. Nelson.

Principles and techniques of counseling with individuals concerning various types of educational, vocational, and social adjustment problems. Case studies.

584. GROUP TECHNIQUES IN GUIDANCE

Spring term. Credit two hours. Prerequisite: permission of the instructor. Mr. Nelson.

Methods and materials for presenting educational and occupational information to students. Theory and practice of group guidance, and counseling in a group setting.

585. OCCUPATIONAL AND EDUCATIONAL INFORMATION

Fall term. Credit four hours. Prerequisite: permission of the instructor. Mr. Nelson.

Survey and appraisal of occupations and training opportunities; study of sources of educational and vocational information; job analysis; vocational trends. Field trips to places of employment.

602. FIELD LABORATORY IN STUDENT PERSONNEL ADMINISTRATION

Either term. Credit and hours to be arranged. Prerequisite: consent of instructor. Members of the staff.

681. SEMINAR IN STUDENT PERSONNEL ADMINISTRATION

Either term. Credit arranged. Registration by permission. S-U option. Mr. Hedlund.

The following courses are not ordinarily offered on campus during the academic year, but they are offered in alternate summer sessions, along with most of the courses listed above.

586. ORGANIZATION AND ADMINISTRATION OF GUIDANCE PROGRAMS

Credit two hours.

587. PRACTICUM IN MEASUREMENT AND APPRAISAL FOR COUNSELORS

Credit two hours.

588. CASE STUDIES IN COUNSELING

Credit two hours.

## HISTORY, PHILOSOPHY, AND SOCIOLOGY OF EDUCATION

Robert H. Ennis, D. Bob Gowin, Miss Isabel J. Peard, Frederick H. Stutz.

All doctoral students will be expected to select one or more of the following four branches of this subject for an area of specialization: history of education, philosophy of education, educational sociology, and comparative education. A candidate who chooses comparative education will also be expected to become a specialist in one of the other three branches.

Ordinarily about half of a candidate's program will include study in one or more of the following disciplines: history, philosophy, sociology, government, and economics. At least one minor for the doctorate will be outside the Field of Education.

Areas of faculty and student study and research interests include structure of subject matter, analysis of educational concepts, fundamental assumptions in educational research, critical thinking, relation of philosophy and education, curriculum, logic in teaching, nature of theory in education, role of philosophy in teacher education, school-community relations, social roles of teachers, student climate, educational leadership, and educational aims.

### 470. SOCIAL AND PHILOSOPHICAL FOUNDATIONS OF EDUCATION

Either term. Credit three hours. Registration in morning sections limited to fifty students; afternoon sections, twenty-five students. Fall term, Miss Peard and Mr. Ennis. Spring term, Messrs. Gowin and Stutz.

A study of the persistent problems of education in a democracy.

### 471. LOGIC IN TEACHING

Spring term. Credit three hours. Mr. Ennis.

A consideration of definition, explanation, proof, problem solving, and the structure of subject matter as they bear upon classroom teaching.

### 472. PHILOSOPHERS ON EDUCATION

Fall term. Credit three hours. Admission by consent only. Miss Peard.

Selected writings by such philosophers as Plato, Descartes, Rousseau, and Dewey, as well as some contemporary writers, will be examined in their own right and for the light they throw on persistent problems in education.

### 473. CONTEMPORARY PHILOSOPHY OF EDUCATION

Spring term. Credit three hours. Mr. Gowin.

The ideas of pragmatists, humanists, analysts, and existentialists will be examined in relation to educational thought and practice.

### 476. THE URBAN SCHOOL

Spring term. Credit three hours.

An analysis of the problems of teaching and learning in the urban elementary and secondary school. The social milieu of the central city school will be examined briefly; then, some specific organizational, curricular, and instructional ideas aimed at improving the quality of education in this environment will be studied in detail.

### 574. HISTORY OF AMERICAN EDUCATION

Fall term. Credit three hours. Mr. Stutz.

An examination of the role of education in shaping American society. Chief emphasis will be on the period from 1820 to 1900.

578. COMPARATIVE EDUCATION

Spring term. Credit three hours.

A comparative treatment of several national systems of education from a historical perspective.

598. EDUCATION AS A FIELD FOR INQUIRY

Fall term. Credit three hours. Mr. Stutz.

Designed primarily for students without previous training or experience in the field of education, this course is intended to provide insight into the nature and content of the field to which their research efforts will be directed. The course will cover the structure of the educational enterprise, its history, its objectives and the ways it seeks to achieve them, its main concerns, emphases, and sources of strain.

671. SEMINAR: ANALYSIS OF EDUCATIONAL CONCEPTS

Spring term. Credit three hours. Admission by consent. Mr. Ennis.

672. SEMINAR IN EDUCATIONAL CLASSICS

Spring term. Credit three hours. Admission by consent. Miss Peard.

673. SEMINAR IN JOHN DEWEY'S PHILOSOPHY OF EDUCATION

Fall term. Credit three hours. Prerequisite: prior course in philosophy or philosophy of education and consent of the instructor. Mr. Gowin.

Dewey's conceptions of the nature of experience, knowledge, value, and metaphysics will be analyzed, as well as his method of philosophizing. Students will read widely in Dewey's writings and in those of his critics and disciples.

674. SEMINAR IN HISTORY OF EDUCATION

Spring term. Credit three hours. Admission by consent. Mr. Stutz.

699. CONCEPTUAL PROBLEMS IN EDUCATIONAL INQUIRY

Fall term. Credit three hours. Primarily for doctoral candidates in their second year of residence. Prerequisite: 599 or equivalent, or permission of instructor. Mr. Ennis.

An examination of such concepts as causation, operationism, validity, reliability, hypothetical constructs, generalization, explanation, probability, and hypothetico-deductive method.

SOCIOLOGY 619. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours.

## HOME ECONOMICS EDUCATION

Miss Sara E. Blackwell, Miss Irene I. Imbler, Miss Marion Minot, Mrs. Helen Y. Nelson, Miss Kathleen Rhodes.

Candidates are expected to have had a concentration of course work in several areas of home economics or relevant social and biological sciences or both. Previous study in education and teaching experience are recommended.

Study of the basic behavioral sciences is an integral part of the program. Concepts and methods of inquiry relevant to problems of curriculum planning, teaching and learning, and evaluation are emphasized. Each student's program is planned individually. Specialization is possible in teacher education, adult education, international education, administration, and research.

Research interests of faculty members and students presently include the measurement of cognitive behavior, characteristics of learners, evaluation of occupational home economics programs, education for the disadvantaged, and biosocial correlates of education in developing countries.

#### H.E. Ed. 410. THE HOME ECONOMIST AS A TEACHER

Fall term. Credit three hours.

Designed for students who plan to be extension agents, dietitians, social workers, home service representatives, or youth group leaders or who plan to undertake other work which will involve teaching in informal situations.

#### H.E. Ed. 411. ADULT EDUCATION

Spring term. Credit three hours. Prior completion of H.E. Ed. 410 or H.E. Ed. 440 strongly recommended. Miss Imbler.

Focuses on broad aspects of adult education, such as philosophy of adult education, sociological factors affecting adult education program development in communities, psychology of adults as learners, principles of program planning and evaluation.

#### H.E. Ed. 440. THE ART OF TEACHING

Fall and spring term. Credit three hours.

Consideration is given to (1) procedures for determining the scope and sequence of the content of home economics classes and (2) the choice of learning experiences appropriate for use in the secondary schools.

#### H.E. Ed. 441. THE ART OF TEACHING

Fall and spring term. Credit two hours.

Consideration is given to major concerns related to the teaching of home economics at secondary and adult levels.

#### H.E. Ed. 442. THE ART OF TEACHING

Fall and spring terms. Credit six hours. Student teaching full time for six weeks.

Guided student teaching experience at cooperating public schools.

#### H.E. Ed. 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit and hours to be arranged. Department faculty.

For students recommended by their chairmen and approved by the instructor in charge for independent, advanced work.

#### H.E. Ed. 540. SEMINAR IN A PHILOSOPHY OF ADULT EDUCATION

Fall term. Credit three hours. Miss Imbler.

Designed for administrators and supervisors of adult education programs, teachers of adults, cooperative extension agents, and graduate students in adult education. A different problem area may be considered each time the seminar is offered. The seminar may be repeated for credit with the permission of the instructor.

#### H.E. Ed. 549. CURRICULUM PLANNING IN HOME ECONOMICS

Spring term. Credit three hours. For high school and college teachers, administrators, and extension personnel. Miss Rhodes.

Attention is given to social-cultural foundations of the home economics curriculum, social-psychological needs of learners, the influence of educational philosophy on curriculum planning, and curriculum planning for different age and ability levels.

H.E. Ed. 555. COMPARATIVE ASPECTS OF EDUCATION FOR FAMILY AND COMMUNITY DEVELOPMENT

Fall term. Credit three hours. Prerequisite: appropriate courses in sociology and education. Miss Rhodes.

A study of factors related to the development of educational programs for family and community improvement in differing cultures. Analysis of needs and evaluation of methods of approach in countries at varying levels of development.

H.E. Ed. 559. EVALUATION

Fall term. Credit three hours. Mrs. Nelson.

Basic principles of evaluation studies in relation to specific methods of appraising educational programs or individual achievement. Opportunities will be given for constructing and using evaluation instruments.

H.E. Ed. 580. SEMINAR IN HOME ECONOMICS EDUCATION

Fall and spring terms. Credit one hour. Department faculty. May be repeated for credit with permission of instructor.

H.E. Ed. 599. MASTER'S THESIS AND RESEARCH

Fall and spring terms. Credit and hours to be arranged. Registration with permission of the chairman of the graduate committee and the instructor. Department faculty.

H.E. Ed. 660. SEMINAR IN EVALUATION

Spring term. Credit two hours. Prerequisite: H.E. Ed. 559 and Ed. 453 or equivalent. Miss Blackwell.

Opportunity for intensive study of literature concerning educational evaluation, for refinement of appraisal techniques, and for analysis and interpretation of data from current research.

H.E. Ed. 661-662. THE TEACHER EDUCATOR IN HOME ECONOMICS

For students preparing for teacher education positions involving supervision of student teachers. Prerequisite: permission of the instructors and, for 662, experience in teaching homemaking at the secondary level.

661. Fall. Credit three hours. Mrs. Nelson.

Provides an opportunity to develop understanding of teacher education practices by observing and participating in H.E. Ed. 440, and by observation of student teachers and of supervisory conferences in student-teaching centers.

662. Spring. Credit four hours. Miss Minot.

Seminar is concerned with basic principles of supervision and their application to the preservice education of home economics teachers. Observation and participation in H.E. Ed. 441 and 442, including some teaching in the courses and the supervision of a student teacher.

H.E. Ed. 663. INTERNSHIP AND FIELD WORK IN TEACHER EDUCATION

Fall term. Credit two hours. Miss Minot, Mrs. Nelson.

Involves supervision of student teachers and conferences as needed with college supervisor and cooperating teachers in the public school. Provision will be made for a follow-up visit to a first-year teacher.

**H.E. Ed. 699. DOCTORAL THESIS AND RESEARCH**

Fall and spring terms. Credit and hours to be arranged. Registration with permission of the chairman of the graduate committee and the instructor. Department faculty.

**SCIENCE, NATURE, AND CONSERVATION EDUCATION**

Richard B. Fischer, Joseph D. Novak, Verne N. Rockcastle.

Persons with an interest in science, nature study, and conservation of natural resources will find programs arranged to meet requirements for Master's or doctoral degrees in either of two areas:

(1) Science teaching, science supervision, science curriculum development, teacher preparation and research at elementary, secondary, and college levels. Programs may meet requirements for permanent certificates or broaden and deepen preparation in the sciences. The science departments offer the subject matter preparation, while the Department of Education offers many helpful professional courses and seminars;

(2) Nature interpretation and conservation education leading to professional positions as interpretive naturalists, directors of interpretive nature centers, or conservation education specialists with school systems, state departments, and private or governmental agencies dedicated to the development of public understanding and enjoyment of natural resources. The purpose is to prepare persons strong in science subject matter and capable of teaching people at various age levels. The program is developed around basic courses in biology, ecology, and conservation supported by communications skills such as natural history writing, freehand and scientific illustrating, exhibit designing, and public speaking.

**401. OUR PHYSICAL ENVIRONMENT**

Spring term. Credit three hours. Open by permission only to students primarily interested in public school teaching. Limited to fifteen students. Mr. Rockcastle.

A study of the commonplace phenomena and substances in our physical environment, and their use in demonstrating basic scientific principles. Frequent field trips and first-hand examination will be used in studying air, water, soil, light, and sound, as well as some elementary mechanical and electrical devices. Emphasis will be placed on the physical environment as an aid to teaching the natural sciences in the public schools and on individual research as a means of learning the processes of science.

**402. NATURAL HISTORY LITERATURE**

Spring term. Credit two hours. Given in alternate years. Mr. Fischer.

A survey of writings in the nature and conservation education fields, with special attention to outstanding writers and their works, designed for teaching and for leisure time reading. Recommended for those who plan to take 403.

**403. NATURAL HISTORY WRITING**

Fall term. Credit two hours. Registration by permission. Limited to twenty students. Offered in alternate years. Mr. Fischer.

Designed for persons who wish to write popular articles for the specialized fields of natural history and conservation. Subject matter, types of articles, and outlets for students' articles are covered, along with the preparation of news releases, posters, brochures, and periodical publications.



404-405. FIELD NATURAL HISTORY

Fall or spring term. Credit three hours. A full-year course; may be taken either term or both terms. Limited to eighteen students a section. Friday section primarily for those experienced in field biology. Mr. Fischer.

Devoted to studies of local plants and animals, their ecology and their use in nature interpretation, conservation education and field biology programs. This is a methods and materials course useful to teachers at all levels.

407. THE TEACHING OF ELEMENTARY SCHOOL SCIENCE

Fall term. Credit three hours. Registration by permission. Limited to eighteen students. Mr. Rockcastle.

The content and methods of elementary school science and nature study, with field work and laboratory emphasis on modern and experimental curricula. Includes class observation and experimentation.

408. METHODS OF TEACHING SCIENCE IN SECONDARY SCHOOLS

Fall or spring term. Credit three hours. Prerequisite: 411 or equivalent, or concurrent registration. For students without teaching experience. Open to students in science education intending to register for 409; permission of instructor required for all others. Limited to twenty students per section.

Consideration of current methodology, new curricula, and materials for teaching science in secondary schools. Attention is given to the aims and goals of science instruction in relation to classroom techniques. Systematic observations in local schools. Use of video tapes.

409. PRACTICE IN TEACHING SCIENCE IN SECONDARY SCHOOLS

Fall or spring term. Credit six or twelve hours. Prerequisite: 408 and permission of the instructor.

Supervised teaching practice with frequent conferences and special seminars. Multimedia forms of feedback information concerning the classroom performance will be provided to the practice teacher.

505. NATURE CENTER OPERATION AND PROGRAMMING

Fall term. Credit three hours.

Designed for interpretive naturalists and others who will be responsible for showing persons their place in the environment they share with other organisms, explaining how man's actions affect the living things around him, and teaching what can and must be done to preserve the quality of the environment. Course content emphasizes methods of interpreting nature such as live museum, bulletin board displays, interest corners, nature walks, slide talks, lectures with visual aids, photographic exhibits, and use of schoolyard and neighboring teaching resources; construction of teaching aids and cataloging and storage of teaching materials will also be covered.

507. THE TEACHING OF SCIENCE

Fall term. Credit three hours. Limited to twenty students. Mr. Novak and assistants.

A consideration of learning theory as applied to problems of selection and organization of subject matter, methods of teaching, and instructional innovations. Study of published research relevant to the improvement of science teaching. Course is conducted in a seminar style.

508. NATURE CENTER DEVELOPMENT AND DIRECTION

Spring term. Credit three hours.

Providing directors with the managerial skills needed for successful opera-

tion of a nature center, the course is organized around techniques such as recruiting, fund raising, publicity, personnel management, brochure production, public relations, allocating funds and budgeting, enlisting local support, liaison with schools, program development, natural area surveys, planning new buildings, adding to existing facilities, and determining staff needs; also, nature center directors as local conservation catalysts.

#### 509. DEVELOPMENT OF CURRICULUM IN SCIENCE

Spring term. Credit three hours. Limited to twenty students.

Study of new science curriculum programs, including philosophy and rationale of the programs. Observation of classes using new materials. Concentrated study of science curriculum development in the area of the individual student's interest. The course is conducted in a seminar style.

#### 606. SCIENCE EDUCATION SEMINAR

Fall or spring term. Credit one hour. Required of graduate students who major or minor in this division. S-U grades only. Messrs. Fischer, Novak, and Rockcastle.

### GENERAL

#### 499. INFORMAL STUDY IN EDUCATION

Maximum credit, three hours each term. Members of the staff.

For qualified students approved by an adviser on the Education staff who is personally responsible for the study, for one of two purposes: (1) to study a problem or topic not covered in a regular course; or (2) to undertake independent tutorial or honors study in the area of the student's research interests. The program is not designed for study supplementary to a regular course for the purpose of increasing the content and credit allocation of the course.

#### 500. SPECIAL STUDIES

Credit as arranged. Limited to students working on theses or other research projects; registration must be approved by a staff member who will assume responsibility for the work. Members of the staff.

#### 594. COLLEGE TEACHING

Spring term. Without credit. Members of the University staff.

Designed for those who plan to teach in colleges and universities. Concepts and methods of teaching, organization of subject matter, motivation, learning, testing, grading, and similar problems are treated.

#### 600. INTERNSHIP IN EDUCATION

Fall and spring term. Credit two to six hours as arranged. Members of the faculty.

Opportunity for apprentice or similar practical experience on the graduate level in administration, agricultural education, guidance, personnel administration, supervision, and other types of professional service in education.

#### H.E. Ed. 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

#### H.E. Ed. 599. THESIS AND RESEARCH

#### 698. PRACTICUM IN EDUCATIONAL RESEARCH

Fall and spring terms. Three to six hours credit per term. Mr. Ennis and other members of the staff.

Participation in a research project under the direction of the principal investigator of said project. Level of responsibility will increase with the experience and capability of the candidate, the eventual goal being his assumption of responsibility for a portion of the research.

## INTERDEPARTMENTAL COURSES

See listings of the appropriate Fields for descriptions of the following courses.

### COMPUTER SCIENCE 404. COMPUTER METHODS IN BEHAVIORAL SCIENCES

Spring term. Credit four hours. Prerequisite: an intermediate statistics course (may be taken concurrently). Mr. Rudan.

### DEVELOPMENT SOCIOLOGY 424. OCCUPATIONAL STRUCTURE IN INDUSTRIAL AND DEVELOPING COUNTRIES

Fall term. Credit three hours. Mr. Taietz.

### DEVELOPMENT SOCIOLOGY 651. SEMINAR: OCCUPATIONAL STRUCTURE

Spring term. Credit three hours. Mr. Bauder.

### ILR 323. TECHNIQUES AND THEORIES OF TRAINING IN ORGANIZATIONS

Spring term. Credit three hours. Mr. Foltman or Mr. Frank.

### ILR 423. DESIGN AND ADMINISTRATION OF TRAINING PROGRAMS

Fall term. Credit three hours. Mr. Foltman or Mr. Mesics.

### ILR 564. PUBLIC POLICY AND DEVELOPMENT OF HUMAN RESOURCES

Fall term. Credit three hours. Mr. Foltman.

### ILR 567. MANAGEMENT AND LEADERSHIP DEVELOPMENT

Fall term. Credit three hours. Mr. Campbell or Mr. Foltman.

### ILR 667. CURRENT ISSUES AND RESEARCH IN HUMAN RESOURCES DEVELOPMENT

Fall and spring terms. Credit three hours. Mr. Foltman or Mr. Gruenfeld.

### SOCIOLOGY 441. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY — I

Fall term. Credit four hours. Mr. Williams.

### SOCIOLOGY 442. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY — II

Spring term. Credit four hours. Prerequisite: Sociology 441 or consent of the instructor. Mr. Williams.

## GOVERNMENT

Faculty: Benedict R. Anderson, Douglas E. Ashford, Allan D. Bloom, Michael J. Brenner, Werner J. Dannhauser, Arch T. Dotson, Mario Einaudi, Milton J. Esman, Andrew Hacker, Richard I. Hofferbert, George McT. Kahin, David Karns, Eldon Kenworthy, Andrew Milnor, David P. Mozingo, Steven Muller, Mark Nadel, Clinton Rossiter, Arthur Rovine, Myron Rush, Peter J. Sharfman, Frederick Teiwes, Robert Weissberg.

Field Representative: Eldon G. Kenworthy, 208A West Sibley Hall.

**ADMISSION REQUIREMENTS.** All applicants for admission must submit the scores of the Graduate Record Examination Aptitude and Advanced Tests with their other credentials. Applicants should take these tests no later than December.

**LANGUAGE REQUIREMENTS.** A candidate for the Ph.D. degree is expected to demonstrate a high level of proficiency in at least one foreign language chosen from French, German, or Russian, or a substitute approved by his Special Committee. The Special Committee may, for reasons having to do with a student's program, require more than one language. At the discretion of his Special Committee, a candidate for the M.A. degree may be required to demonstrate reading ability in one foreign language.

**FIELD REQUIREMENTS.** The program of studies leading to a higher degree seeks to insure for each candidate a broad knowledge of the Field, as well as a specialized competence which will enable him to pursue with distinction a professional or scholarly career in political science.

#### MAJOR AND MINOR SUBJECTS

In regard to minor subjects, see the first paragraph of the description below.

Group I  
American Government

Group III  
Comparative Government

Group II  
Political Theory

Group IV  
International Law and Relations

In contemporary political science, many of the traditional classifications are changing. The Field of Government, therefore, does not limit minors to a specified number of subjects. For example, within the major subject American government, a candidate for a higher degree may choose to minor in American constitutional law, the American political process, or some other substantial aspect of this subject. Within political theory, a candidate may wish to minor in modern or ancient and medieval theory. Within comparative government, he may wish to minor in Western or non-Western political systems. Within international law and relations, he may wish to minor in international law only, or the relations of groups of nations whose goals or systems of government make them a reasonable focus for graduate study. Graduate students are encouraged to select, with the approval of their Special Committee, minor subjects which are adapted to their scholarly goals and also represent significant portions of the Field.

A candidate for the Ph.D. degree must offer on the Admission to Candidacy Examination one major and at least two minor subjects. No more than one minor may be chosen from a single group of subjects; one of the minors may be outside the Field. A candidate for the Master's degree must offer one major and at least one minor; the minor or minors must belong to a different group from the major or be outside the Field.

All candidates are expected to secure a broad preparation in the Field. The Special Committee and the Field Representative may, at the time of the field review or the qualifying examination, recommend particular courses or seminars outside the major or minor subjects which must be completed satisfactorily; or they may, in place of such courses or seminars, administer an examination to assess the candidate's preparation.

Cornell offers a number of programs in foreign area studies coordinated by

its Center for International Studies, viz., the China Program, the Latin American Program, the South Asia Program, and the Southeast Asia Program. There are, in addition, Faculty Committees on African, Near Eastern, and Soviet Studies. A student wishing to minor in one of these specialized areas may obtain additional information from the following: Mr. Thomas T. Poleman, Committee on African Studies; Mr. Harold Shadick, China Program; Mr. Donald K. Freebairn, Latin American Program; Mr. Gerald B. Kelley, South Asia Program; Mr. George McT. Kahin, Southeast Asia Program; Mr. George Gibian, Committee on Soviet Studies (see pp. 32-42).

**FIELD REVIEW.** Within two weeks after the beginning of residence, the Field Representative, with the assistance of an ad hoc committee from the faculty of the Field or from other Fields where indicated, will conduct an initial review of the candidate's preparation and tentative plan of study.

**QUALIFYING EXAMINATION.** Each candidate for the Ph.D. degree will take a qualifying examination ordinarily held during the last month of his second term of graduate study. The examination will focus on the course and seminar work done during the year. The Special Committee may decide to have a written as well as an oral examination.

Each candidate will be placed in one of three categories on the basis of his performance on the qualifying examination. A candidate placed in category A will be confirmed in the Ph.D. program. Upon satisfactory completion of his Admission to Candidacy Examination, he may petition the Graduate School to award him a Master's degree. A student placed in category B will be awarded a Master's degree upon satisfactory completion of the requirements for that degree. A student placed in category C will not be permitted to reregister as a student in the Field of Government.

All Ph.D. candidates are required to serve as teaching assistants for one year. Normally, this will be in their second year, although in special circumstances, it may be in their third year of graduate study. Students entering the program with a Master's degree ordinarily will be expected to serve as teaching assistants during their first year of graduate work in the Department. Normally, financial support will be available to candidates with Master's degrees for only three years, including the year in which they serve as teaching assistants.

**ADMISSION TO CANDIDACY EXAMINATION.** Each candidate will present his major and minor subjects for an Admission to Candidacy Examination at a time fixed by his Special Committee in accordance with the regulations of the Graduate School. This comprehensive examination must be passed before the candidate begins full-time work on a thesis or dissertation. The examination ordinarily will be both written and oral.

**FINAL EXAMINATION.** Each candidate will be examined orally on his thesis or dissertation.

## Research and Study Opportunities

As noted above, the University has a series of programs in foreign area studies, and students minoring in such areas have every opportunity to participate in the numerous research projects being carried on both here and abroad. A number of the faculty in the Field of Government are members of these programs and can act as advisers for such research.

## Faculty Specializations

Within the four major subject groupings listed earlier, the fields and specializations of the faculty present a broad range of choice and allow for a diversity of interests.

In American Government: Professor Dotson—public administration; Professor Hacker—political sociology; Professor Hofferbert—comparative American state government, quantitative methods of analysis and the general problem of comparing political systems; Professor Karns—international politics, communications between nations and quantitative political analysis; Professor Milnor—Congress and interest groups; Professor Nadel—modern American political institutions, group behavior and the policy process; Professor Rossiter—political and constitutional history of the United States; and Professor Weissberg—political behavior, focusing primarily upon the formation of political attitudes and political socialization.

In Political Theory: Professor Bloom—the classical tradition; Professor Dannhauser—nineteenth and twentieth century political thought; Professor Einaudi—modern political philosophy; and Professor Rossiter—American political thought.

In Comparative Government and International Law and Relations: Professor Anderson—Southeast Asian government and politics; Professor Ashford—the government of North African countries and the politics of modernization; Professor Brenner—the politics of industrialization and technology; Professor Dotson—the politics of modernization; Professor Einaudi—Western Europe; Professor Kahin—the international relations of Asia and the government and politics of Southeast Asia; Professor Milnor—comparative legislative systems and political parties; Professor Muller—the political systems of Great Britain and Germany; Professor Rovine—international law and organization; Professor Rush—Soviet politics and foreign policy; and Professor Teiwe—Chinese politics.

## Special Departmental Awards

WALTER S. CARPENTER JR. FELLOWSHIP (stipend plus tuition and General Fee). Graduate students majoring in comparative government under the direction of the Walter S. Carpenter Professor of International and Comparative Politics are eligible.

NEWTON C. FARR FELLOWSHIP (stipend plus tuition and General Fee). Graduate students majoring in American government under the direction of the John L. Senior Professor of American Institutions are eligible.

JOHN L. SENIOR FELLOWSHIP (stipend plus tuition and General Fee). Graduate students majoring in American government under the direction of the John L. Senior Professor of American Institutions are eligible.

## Courses

### SEMINARS

501. READING SEMINAR IN CONTEMPORARY POLITICAL INQUIRY  
Fall term. Credit four hours. Mr. Hofferbert.

503. READING SEMINAR IN AMERICAN GOVERNMENT

Spring term. Credit four hours. Mr. Milnor.

505. READING SEMINAR IN COMPARATIVE GOVERNMENT

Spring term. Credit four hours. Mr. Brenner.

507. READING SEMINAR IN POLITICAL THEORY

Fall term. Credit four hours. Mr. Dannhauser.

509. READING SEMINAR IN INTERNATIONAL RELATIONS

Fall term. Credit four hours. Mr. Sharfman.

511. AMERICAN POLITICAL PARTIES AND ELECTIONS

Fall term. Credit four hours.

516. CONSTITUTIONAL LAW AND JURISPRUDENCE

Spring term. Credit four hours.

521. SEMINAR IN AMERICAN BUREAUCRACY AND PUBLIC POLICY

Fall term. Credit four hours. Mr. Nadel.

523. SEMINAR IN PROBLEMS OF PUBLIC ADMINISTRATION

Fall term. Credit four hours.

525. SEMINAR IN AMERICAN POLITICAL BEHAVIOR

Fall term. Credit four hours. Mr. Weissberg.

528. SEMINAR IN AMERICAN POLITICAL THOUGHT

Spring term. Credit four hours. Mr. Rossiter.

530. COMPARATIVE PUBLIC ADMINISTRATION

Spring term. Credit four hours. Mr. Esman.

532. SEMINAR IN AMERICAN STATE AND LOCAL POLITICS

Spring term. Credit four hours. Mr. Hofferbert.

534. SEMINAR IN THE POLITICS OF THE SOVIET UNION

Fall term. Credit four hours. Mr. Rush.

535. SEMINAR IN PROBLEMS OF POLITICAL SUCCESSION

Spring term. Credit four hours. Mr. Rush.

537. POLITICAL DEVELOPMENT AND SOCIAL CHANGE

Fall term. Credit four hours. Mr. Ashford.

538. LOCAL GOVERNMENT AND DEVELOPMENT

Spring term. Credit four hours. Mr. Ashford.

540. SEMINAR IN LATIN AMERICAN POLITICS

Spring term. Credit four hours. Mr. Kenworthy.

541. COMPARATIVE POLITICAL PARTIES

Fall term. Credit four hours. Mr. Milnor.

542. SEMINAR IN POLITICAL AND ECONOMIC CHANGE IN  
CONTEMPORARY EUROPE

Spring term. Credit four hours. Mr. Einaudi.

547. SEMINAR IN CHINESE POLITICS

Spring term. Credit four hours. Mr. Teiwes.

550. SEMINAR IN POLITICAL ANTHROPOLOGY: SOCIAL  
STRUCTURE AND POLITICS

Spring term. Credit four hours. Messrs. Anderson and Siegel.

555. SEMINAR IN POLITICAL THEORY

Spring term. Credit four hours. Mr. Bloom.

556. SEMINAR IN POLITICAL THEORY

Fall term. Credit four hours. Mr. Bloom.

558. SEMINAR IN MODERN POLITICAL THEORY

Fall term. Credit four hours.

559. SEMINAR IN MODERN POLITICAL THEORY

Spring term. Credit four hours.

571. SEMINAR IN INTERNATIONAL POLITICS

Fall term. Credit four hours. Mr. Karns.

575. SEMINAR IN INTERNATIONAL ORGANIZATION AND  
RELATIONS

Spring term. Credit four hours. Mr. Rovine.

577. SEMINAR IN THE INTERNATIONAL RELATIONS OF ASIA

Fall term. Credit four hours.

583. SEMINAR IN COMMUNIST CHINA IN INTERNATIONAL  
POLITICS

Fall term. Credit four hours. Mr. Mozingo.

644. SEMINAR IN POLITICAL PROBLEMS OF SOUTHEAST ASIA

Spring term. Credit four hours.

## Courses of Special Interest to Graduate Students

In addition to the courses listed here, the Department of Government offers about fifteen seminars for undergraduate majors, to which graduate students may be admitted with special permission.

### 312. URBAN POLITICS

Spring term. Credit four hours.

Analysis of relationships between governmental activities and political power, making use of systematic studies of selected problems in large urban centers and their suburban satellites.



313. AMERICAN CONSTITUTIONAL LAW

Fall term. Credit four hours.

Analysis of the role of the Supreme Court and of the constitutional law it expounds. The course will be conducted through lectures and discussion of assigned cases.

314. POLITICS AND SOCIETY

Spring term. Credit four hours. Mr. Hacker.

315. INTEREST GROUPS AND INFORMAL REPRESENTATION IN AMERICAN POLITICS

Spring term. Credit four hours. Mr. Milnor.

Role of groups in the Congress and bureaucracy. Special attention to the limits of the group system, to the group system and social reform, and to the problems of representation for the poor.

316. THE AMERICAN PRESIDENCY

Spring term. Credit four hours. Mr. Nadel.

Analysis of the office and powers of the president, with emphasis on his activities as administrator, diplomat, commander, legislator, politician, and head of state.

317. AMERICAN POLITICAL PARTIES

Fall term. Credit four hours.

The nature and operation of American national and state party systems and politics, related to the broad setting of the governmental system and prevailing political values.

318. THE AMERICAN CONGRESS

Fall term. Credit four hours. Mr. Milnor.

An intensive study of politics and policy formation in Congress. Special emphasis on the problems of the representative assembly in the twentieth century.

323. PUBLIC ADMINISTRATION: THE FOURTH BRANCH

Fall term. Credit four hours. Mr. Dotson.

An examination of the national administrative branch, including the Executive Office of the President, departments, regulatory commissions, government corporations, and other agencies. Particular attention will be given to the constitutional and political problems which result from the rise of administrative power.

325. PUBLIC POLICY IN THE AMERICAN STATES

Fall term. Credit four hours. Mr. Hofferbert.

A study of the processes of public policy formation in the fifty states. The relevance of state government to American life is examined with special attention to the relationships between the social setting, patterns of partisanship, and governmental processes of the states.

333. GOVERNMENT AND POLITICS OF THE SOVIET UNION

Fall term. Credit four hours. Mr. Rush.

A focus on the politics of the top leaders, the institutions through which they operate, and the impact of their policies on the Soviet people. Emphasis also on phases in the development of the Soviet system and on the ways in

which the Soviet Union served as the prototype of all subsequent Communist states, as well as on the variant forms that have appeared in other states.

### 334. FOREIGN POLICY OF THE U.S.S.R.

Spring term. Credit four hours. Mr. Rush.

The evolution of Soviet foreign policy since 1917, and how the revolution affected the international system and was, in turn, modified by it. Considerable attention will be given to the response of leaders to crucial events, such as the coming of the Nazis to power and the advent of nuclear weapons, and to the origins and prospects of the Cold War.

### 336. POLITICAL ATTITUDES AND PARTICIPATION

Fall term. Credit four hours. Mr. Ashford.

A comparative analysis of participation and involvement in the political process at the local level in the United States and in selected European and developing countries. An analysis of attitudinal and personality factors as they relate to political life in the community.

### 338. POLITICS AND MODERNIZATION

Spring term. Credit four hours. Mr. Dotson.

A comparative study of the political development of nations. Particular attention is given to selected cases in Southeast Asia, South Asia, West Africa, and Latin America. The political implications of the growing gap between advanced and backward states are examined critically.

### 340. GOVERNMENT AND POLITICS OF LATIN AMERICA

Fall term. Credit four hours. Mr. Kenworthy.

An introduction to the national politics of the larger nations in recent decades, emphasizing the impact of social and economic changes—international as well as domestic—upon them.

### 342. GOVERNMENT AND POLITICS OF FRANCE AND BRITAIN

Fall term. Credit four hours. Mr. Brenner.

An examination of the institutions and practices of the French and British political systems in the context of the issues and problems characteristic of advanced industrial societies.

### 343. GOVERNMENT AND POLITICS IN THE COMMONWEALTH

Spring term. Credit four hours. Mr. Anderson.

Comparative analysis of the adaptations of the British model of parliamentary government to contrasting social, economic, and historical environments in selected member states of the Commonwealth.

### 344. GOVERNMENT AND POLITICS OF SOUTHEAST ASIA

Fall term. Credit four hours. Mr. Anderson.

Analysis of the organization and functioning of the political systems of Southeast Asia, with special attention to the problems of postcolonial social and political development.

### 347. CHINESE GOVERNMENT AND POLITICS

Fall term. Credit four hours.

General introduction to the politics of modern China with particular emphasis on the political processes of the People's Republic of China.

### 349. POLITICAL ROLE OF THE MILITARY

Spring term. Credit four hours. Mr. Anderson.

Comparative study of selected modern states and types of political systems in which the military have played a major role in domestic politics. Attention will be given to the social and ideological character of the "politicized" military and various forms of military government.

### 350. COMPARATIVE REVOLUTIONS

Spring term. Credit four hours. Mr. Mozingo.

Analysis of major revolutionary movements since World War II (China, Indonesia, Cuba, Algeria, Vietnam) and their social-political origins, ideology, and organization, with special emphasis on contrasting strategies and roads to power.

### 353. THEORETICAL ROOTS OF MODERN POLITICS

Spring term. Credit four hours. Mr. Dannhauser.

A study of the nineteenth-century philosophic sources of the contemporary Left, Right, and Center, concentrating on Marx, Nietzsche, and Mill.

### 355. AMERICAN POLITICAL THOUGHT

Spring term. Credit four hours. Mr. Rossiter.

Survey of the development of American political thought, with emphasis on the origins and uses of ideas. Other kinds of thought—constitutional, social, religious, economic, educational, cultural—are considered in their relations to political thought.

### 372. INTERNATIONAL RELATIONS

Spring term. Credit four hours. Mr. Sharfman.

An analysis of the basic facts, configurations, issues, practices, and problems which characterize contemporary international politics, and an introduction to the concepts and methods used for such analysis.

### 375. CONTEMPORARY AMERICAN FOREIGN POLICY

Spring term. Credit four hours. Mr. Sharfman.

An analysis of general principles, particular decisions and problems, and their interrelation. The frame of reference will be the period since 1945.

### 377. THE UNITED STATES AND ASIA

Spring term. Credit four hours.

An analysis of the relations of the United States with the major states of Asia and with those smaller countries (especially Vietnam) with which it is particularly concerned; attention is also given to the relationship of American policy to the Asian policies of France, Great Britain, and Soviet Russia.

### 381. INTERNATIONAL ORGANIZATION

Fall term. Credit four hours. Mr. Rovine.

The politics of international organization, with primary emphasis on the political and peacekeeping functions of the United Nations. Redistribution of wealth and power, human rights, international service and recruitment, integration, and world order functions are also studied.

### 442. POLITICAL AND ECONOMIC CHANGE IN CONTEMPORARY EUROPE

Spring term. Credit four hours. Mr. Einaudi.

Emphasis will be placed on the key manifestations of change since the war.

The crisis of parties and of social and political institutions. New instruments of public policy. The varieties of public corporations and of planning agencies. The social and technological revolutions and private enterprise. The search for new dimensions of government: regionalism and the supranational communities.

#### 462. ORIGINS OF WESTERN POLITICAL THOUGHT

Spring term. Credit four hours. Mr. Bloom.

A survey of the classical political teachings in their development from the pre-Socratics through Greek and Roman antiquity and in their transformation by the revealed religions.

#### 471. INTERNATIONAL LAW AND WORLD POLITICS: WAR AND ARMED CONFLICT

Fall term. Credit four hours. Mr. Rovine.

The role of international law and organization in creating minimum order in international relations; laws of war and neutrality and efforts to minimize resort to force; war crimes; nuclear and conventional weapons systems limitations. Case studies include Vietnam, Cuba, Korea, the Congo, and the Middle East.

#### 472. INTERNATIONAL LAW AND WORLD POLITICS: PEACEFUL FUNCTIONS

Spring term. Credit four hours. Mr. Rovine.

The role and functions of the law and lawyers in regulating peaceful relationships among states. Among the problems studied are legal issues involved in relations between western, socialist, and African and Asian nations; legal aspects of conflict between private and socialist patterns of development; problems of nationality, territory, jurisdiction, transnational agreement; the law of human rights.

#### 478. THE FOREIGN POLICY OF CHINA

Spring term. Credit four hours. Mr. Mozingo.

An analysis of Chinese concepts of foreign relations and the policy-making process in the People's Republic of China. Emphasis will be placed on such topics as the contemporary Chinese view of their position in the international community and a comparison of the making and implementation of contemporary Chinese policies with respect to such areas as the Soviet bloc, Afro-Asian countries, and the West.

## HOTEL ADMINISTRATION

Faculty: Robert A. Beck, Paul R. Broten, Vance Christian, Charles E. Cladel, Myrtle H. Ericson, Gerald W. Lattin, Helen J. Recknagel, Eben S. Reynolds, Charles I. Sayles, Laura L. Smith, Jeremiah J. Wanderstock.

Field Representative: G. W. Lattin, 103 Statler Hall.

### MAJOR AND MINOR SUBJECTS

Hotel Administration

Hotel Accounting

Graduate work in the Field of Hotel Administration is open only to those who have completed in full the requirements for the undergraduate degree in the School of Hotel Administration at Cornell.

Students holding Bachelors' degrees in the liberal arts or in general business administration who wish a program in hotel administration normally enroll in the undergraduate division. They may become candidates for an additional Bachelor's degree or at their choice simply enroll for a specialized program of hotel administration courses suited to their particular needs.

Candidates for the Master's degree may select either Hotel Administration or Hotel Accounting as their major subject and the other as their minor subject. For the Ph.D., the major subject must be Hotel Administration and two minors must be selected outside the Field. Both Hotel Administration and Hotel Accounting are available as minor subjects for students majoring in another Field.

There is no foreign language requirement for the M.S. degree. Candidates for the Ph.D. degree must demonstrate reading ability in one language other than their native language.

There is a final examination combining subject matter and the thesis for the Masters' degree. All Ph.D. candidates must take the Admission to Candidacy Examination (a comprehensive examination of subject matter taken upon completion of course work) and the Final Thesis Examination.

## Courses

For a description of the following courses, see the *Announcement of the School of Hotel Administration*.

### H.ACC. 189. PROBLEMS IN HOTEL ANALYSIS

Credit two hours.

### H.ACC. 286. INTERNAL CONTROL IN HOTELS

Credit two hours. Prerequisite: Hotel Accounting 181. Mr. Barrett.

### H.ADM. 116. PROBLEMS OF HUMAN BEHAVIOR IN THE HOTEL AND RESTAURANT INDUSTRY

Credit two hours. Prerequisite: Hotel Administration 114 and permission of the instructor.

### H.ADM. 155. LECTURES ON HOTEL MANAGEMENT

Credit one hour. To be taken for credit each semester. Under the direction of Mr. Beck.

### H.ADM. 172. LAW AS RELATED TO INNKEEPING

Credit two hours. Best taken after Hotel Accounting 182 and Economics 104. Mr. Sherry.

### H.ADM. 192. SEMINAR IN REAL ESTATE FINANCE AND INVESTMENT

Credit two hours. Prerequisite: Economics 104 or its equivalent.

### H.ADM. 205. INTERNATIONAL HOTEL CUISINE

Credit three hours. Mr. Bernatsky.

### H.ADM. 219. SEMINAR IN PERSONNEL ADMINISTRATION

Credit two hours. Prerequisite: Hotel Administration 119 and permission of instructor. Mr. Lattin.

**H.ADM. 251. RESTAURANT MANAGEMENT**

Credit three hours. Mr. Bernatsky.

**H.ADM. 253. SPECIAL STUDIES IN RESEARCH**

Credit to be arranged. Open to graduate students in Hotel Administration only. Members of the Graduate Faculty.

**H.ADM. 272. LAW OF BUSINESS: CONTRACTS, BAILMENTS, AND AGENCY**

Credit two hours. Best taken after Hotel Accounting 182 and Economics 104. Mr. Sherry.

**H.ADM. 274. LAW OF BUSINESS: BUSINESS ORGANIZATION—PARTNERSHIPS AND CORPORATIONS**

Credit two hours. Best taken after Hotel Accounting 182 and Economics 104. Mr. Sherry.

**H.ADM. 316. LABOR-MANAGEMENT RELATIONS IN THE HOTEL INDUSTRY**

Credit three hours. Prerequisite: Economics 104. Mr. Beck.

**H.ADM. 353. SPECIAL PROBLEMS IN FOOD**

Spring term. Credit one hour. Permission of instructors required. Prerequisite: Hotel Administration 120, 201, 206, 214, 215 and 220. Miss Ericson and Mr. Wanderstock.

**H.ENG. 265. HOTEL PLANNING**

Credit three hours. Prerequisite: twelve hours of hotel engineering or permission of the instructor.

**BPA 128. FINANCE**

Credit three hours. Prerequisite: Economics 104 and permission of the instructors. Messrs. Bierman and Hass.

**BPA 202. BUSINESS ENTERPRISE AND PUBLIC POLICY**

Credit three hours. Prerequisite: Economics 104 and permission of the instructor. Mr. Hutchins.

**PLANNING 510. PRINCIPLES OF CITY AND REGIONAL PLANNING**

Credit three hours. Mr. Reps.

## HOUSEHOLD ECONOMICS AND MANAGEMENT<sup>8</sup>

Faculty: Gwen J. Bymers, Alice J. Davey, Marjorie S. Galenson, Mary E. Purchase, Mabel A. Rollins, Rose E. Steidl, Ethel L. Vatter, Kathryn E. Walker.

Field Representative: Gwen J. Bymers, 115 Martha Van Rensselaer Hall.

8. Students interested in Consumer Economics can develop a program through this Field.

## MAJOR SUBJECTS

Home Management (M.S.)  
 Household Economics (M.S.)  
 Household Economics and  
 Management (Ph.D. or M.S.)

## MINOR SUBJECTS

Home Management  
 Household Economics  
 Household Economics and  
 Management

**ADMISSION REQUIREMENTS.** Admission is based primarily on evidence of the student's competence to do advanced work. A general or specialized major in home economics is acceptable as background for study in the Field; students with other undergraduate majors will also be considered since other subject matter areas are applied to the work and finances of the home. All candidates resident in the United States during the year preceding matriculation at Cornell must submit the scores of the Miller Analogies Test or the Graduate Record Examination Aptitude Test with their other credentials.

**LANGUAGE REQUIREMENTS.** The Ph.D. candidate must demonstrate reading knowledge of one foreign language by passing the ETS Examination at a level determined by the Language Board or by attaining proficiency as defined by the Division of Modern Languages. Danish, French, German, Norwegian, Russian, Spanish, and Swedish are approved languages for the Field. No foreign language is required for the M.S. degree.

**EXAMINATIONS.** For the Ph.D. degree, a comprehensive Admission to Candidacy Examination and a Final Examination, on completion of the student's research, are required. The Field also requires that Ph.D. candidates pass a qualifying examination before beginning their third semester of graduate study at Cornell. For the Master's degree, a final examination is administered at the completion of the candidate's research and course work.

**FINANCIAL ASSISTANCE.** In addition to general University fellowships, the following grants are especially for students in this Field:

Helen Canon Scholarship, \$1,975 (anticipated award).

Ruth Ada Birk Eastwood, \$1,100 (anticipated award).

Mabel A. Rollins Scholarship, (new award).

## Research and Study Opportunities

Programs of graduate work are individually planned to fit the needs and objectives of the student. No prescribed course of study is required; thus, no two programs are exactly alike.

Since the subject matter in household economics and management draws on several disciplines, an appropriate minor subject or subjects may be chosen from a variety of Fields, including Agricultural Economics, Anthropology, Economics, Education, Industrial and Labor Relations, Psychology, and Sociology, as well as other branches of home economics. At the doctoral level, a single minor to be pursued in depth is approved for the Field.

Faculty members and their specializations are:

Gwen J. Byrners, Professor: consumption economics; consumer problems.

Alice J. Davey, Associate Professor: family decision making.

Marjorie S. Galenson, Assistant Professor: consumption economics; consumer and the law.

Mary E. Purchase, Associate Professor: household equipment; physical science in the home.

Mabel A. Rollins, Professor Emeritus: real income of families and its measurement.

Rose E. Steidl, Associate Professor: environmental analysis design; home management.

Ethel L. Vatter, Associate Professor: family economics; research design.

Kathryn E. Walker, Associate Professor: home management; time-use research.

## Courses

### 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit to be arranged. Department faculty. For students recommended by their chairmen and approved by the head of the department and the instructor in charge for independent advanced work.

### 501. RESEARCH METHODOLOGY

Spring term. Credit two hours. Prerequisite: one course in statistics and consent of the instructor. Mrs. Vatter.

The theory and practice of research in the area of household economics and management. The meaning of science, patterns of scientific investigation in the social sciences, and their applicability to selected concepts in the departmental area.

The course is designed for first- or second-year graduate students. Its purpose is to help students achieve the ability to make critical evaluation of pertinent research findings, and to design sound studies of their own.

### 519. SEMINAR IN FAMILY DECISION-MAKING

Fall. Credit three hours. S-U grades optional. Consult instructor before registering. Miss Davey.

An exploration of decision-making in family settings. The decision maker, the decision context and decision processes are studied.

### 530. FAMILY FINANCIAL MANAGEMENT

Spring. Credit three hours. Prerequisite: an undergraduate course in family financial management. Miss Bymers and Miss Wiegand.

A study of developments in the family financial management field with emphasis on the role of the consultant. An effort will be made to establish criteria for achieving and evaluating successful family financial management.

### 597. SEMINAR

Fall and spring terms. Department faculty.

Planned to orient students to graduate work in the field, to keep students and faculty abreast of new developments and research findings, to acquaint them with subject matter in related areas, and to provide opportunity to examine and discuss problems of the field.

### 599. MASTER'S THESIS AND RESEARCH

Fall and spring terms. Registration with permission of the instructor and chairman of graduate committee. Misses Bymers, Davey, Mrs. Galenson, Misses Purchase, Rollins, Steidl, Mrs. Vatter, Miss Walker.

### 620. PHYSICAL SCIENCE IN THE HOME

Fall term. Credit two or three hours. (Three credits require attending the laboratory.) Consult instructor before registering. Miss Purchase.



Selected principles from mechanics, electricity, heat, sound, and light applied to household equipment. Chemical characteristics of soil, of surfaces to be cleaned, and of supplies used for cleaning and protecting surfaces; the laundry process and supplies. Background information for home economists working with equipment in teaching, extension, or home service.

#### 640. READINGS IN THE ECONOMICS OF CONSUMPTION

Fall term. Credit three hours. Prerequisite: 340 or the equivalent. Consult instructor before registering. Miss Bymers or Mrs. Galenson.

Critical review of the current literature.

#### 650. WORK CAPACITY

Spring term. Credit three hours. Consult instructor before registering. Miss Steidl.

Critical review of research and other literature concerned with description and measurement of work, and design of physical arrangements for work. The study of the human costs of accomplishing household work is emphasized.

#### 652. READINGS IN USE OF TIME

Fall term. Credit three hours. Consult instructor before registering. Miss Walker.

Critical review of research in use of time for household work and leisure in the United States and other countries. Implications of this research in light of contemporary views of time-use problems as seen by sociologists, psychologists, and philosophers. Implications for decision makers in today's homes where multiple role alternatives exist.

#### [689. THE TEACHING OF HOME MANAGEMENT IN COLLEGE]

Spring term. Credit one to three hours by arrangement. Consult instructor before registering. Miss Davey. Alternate-year course: not offered in 1970-71.

#### 695. ECONOMIC PROBLEMS OF FAMILIES

Spring term. Credit three hours. Primarily for doctoral candidates.

Analysis of a few outstanding contributions to economic thought related to this field. Examination of methods of research.

#### 698. SEMINAR FOR DOCTORAL CANDIDATES

Spring term. Credit two hours. Department staff.

Review of critical issues and thought in family economics and home management. Examination of research methods.

#### 699. DOCTOR'S THESIS AND RESEARCH

Fall and spring terms. Registration with permission of the instructor and chairman of graduate committee. Misses Bymers, Davey, Purchase, Rollins, Steidl, Mrs. Vatter, Miss Walker.

When appropriate, undergraduate 200- and 300-level H.E.M. courses may be taken by a graduate student with the approval of his Special Committee and the professor in charge.

## HOUSING AND DESIGN

Faculty: Glenn H. Beyer, Lewis L. Bower, Allen Bushnell, Helen J. Cady, Joseph Carreiro, Joseph Koncelik, G. Cory Millican, Earl Morris, Jose Villegas, A. Lorraine Welling.

Field Representative: Lewis Bower, 328 Martha Van Rensselaer Hall.

Major changes in Fields, programs and course offerings are anticipated in the near future. Applicants for graduate study in Design and Environmental Analysis should write Joseph Carreiro, 3M12 Martha Van Rensselaer Hall, for timely information concerning these. Those interested in Housing should write Lewis Bower, 328 Martha Van Rensselaer Hall.

## MAJOR AND MINOR SUBJECT

### Housing and Design

Design Faculty: Allan Bushnell, Helen J. Cady, Joseph Carreiro, Joseph Koncelik, G. Cory Millican, A. Lorraine Welling.

Housing Faculty: Glenn H. Beyer, Lewis L. Bower, Earl Morris, Jose Villegas.

**M.A. DEGREE.** For the M.A. degree with a major in the Field, work is focused either in housing or in design. For design students, a background in the visual arts is required; for housing students, a background in the social sciences is requisite for admission.

**PH.D. DEGREE.** A major leading to the Ph.D. degree is offered in the socioeconomic aspects of housing. Applicants for admission must have a Master's degree in the social sciences or a related applied area such as city planning.

A candidate usually registers for two minor areas of study; however, when it is appropriate for his program, the student may elect one strong minor area. The broad choice of appropriate minor areas provides the flexibility to tailor work to fit the individual student's needs.

A candidate must demonstrate reading ability in one language other than that in which he received his undergraduate education, chosen from French, German, Russian, Spanish, or English. A candidate may petition his Special Committee to substitute other languages.

## Courses

### DESIGN

#### 312. DESIGN: WEAVING

Fall term. Credit three hours. Prerequisite: 100, 105 or 106 recommended. Limited to eight students. Miss Cady.

A studio course exploring structural processes for fabric design. Projects experiment with various fibers, materials, and techniques.

#### 313. DESIGN: PRINTMAKING

Fall term. Credit three hours. Prerequisite: 100 and 200 or equivalent. Limited to fifteen students. Miss Straight.

A studio course exploring the print as a design form. Emphasis is upon work done with the silk screen, but opportunities are provided for exploring other processes for both fabric and paper. Minimum cost of materials, \$10.

#### 321. RESIDENTIAL DESIGN

Fall term. Credit three hours. Prerequisite: 220. Limited to fifteen students. Mr. Millican.

An introduction to residential architectural design. Through the design solution for specific occupant needs, the student is involved with site,

orientation, climate, and materials. Drafting room work consists of plans, elevations, perspectives, and studies in the presentation of solutions. Lectures, discussions, and required readings.

### 323. CONTEMPORARY DESIGN

Spring term. Credit three hours. Mr. Millican.

An historical study of the emergence and development of contemporary design, 1885 to present. An examination of the social, economic, technical, and style forces which shape the design forms of the present. Also a critical analysis of selected works of furniture, fabrics, interiors, etc.

### 325. INTERIOR DESIGN

Fall term. Credit three hours. Prerequisite: 220 and 321. Limited to fifteen students. Miss Cady.

Interior design problems in evaluation of design qualities of furnishings and materials. Room schemes developed in accordance with the architectural design of the house and family use. Sketches, working drawings, presentation drawings for major projects. Field trip (approximate cost, \$30). An equivalent experience may be arranged.

### 330. CONTRACT INTERIORS

Spring term. Credit three hours. Prerequisite: 325. Limited to fifteen students. Permission of instructor required for home economics students. Mr. Millican.

This course involves the space planning and visual aspects of business and commercial interiors such as hotels, motels, public spaces, and specialized areas; it is primarily designed for Hotel Administration students and fulfills final Hotel Engineering elective requirements. It is also available to home economics students with a strong professional focus.

### 350. ENVIRONMENTAL DESIGN

Spring term. Credit three hours. Prerequisite: 321. Limited to fifteen students. Mr. Bushnell.

An investigation of residential housing with an emphasis on house-to-house relationships, better land use, coordination of landscape, art graphics, and color. The student will be encouraged to develop schemes utilizing modern building techniques and be challenged to program variety, interest, and unity within this framework.

### 415. VISUAL COMMUNICATION TECHNIQUES (Portfolio Preparation)

Spring term. Credit three hours. Limited to fifteen students. Mr. Bushnell.

Development of two-dimensional techniques of visual presentation. Experiments in a variety of media appropriate to effective and dramatic visual persuasion and communication. Composition, introduction to the use of lettering, typography, and photography in page layout.

### 439. DESIGN SEMINAR

Spring term. Credit three hours. Instructor's signature required at pre-registration. Mr. Carreiro.

### 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit to be arranged. Department faculty.

Independent advanced work for students recommended by their chairman and approved by the head of the Department and the instructor in charge.

## 526. INTERIOR DESIGN

Fall term. Credit three hours. Prerequisite: 325. Limited to fifteen students. Mr. Bushnell, Miss Cady, Mr. Koncelik, Mr. Millican, and Miss Welling.

Special units taught by participating staff. Interior design problems of varying complexities at a pace which approximates professional practice.

## 599. M.A. THESIS AND RESEARCH

Fall and spring terms. Registration with permission of the instructor. Mr. Bushnell, Miss Cady, Mr. Carreiro, Mr. Koncelik, Mr. Millican, and Miss Welling.

## HOUSING

## 445. READINGS IN HOUSING

Spring term. Credit two hours. Prerequisite: 540 and permission of the instructor. Department faculty.

## 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit to be arranged. For students recommended by their chairman and approved by the head of the Department, and the instructor in charge for independent, advanced work. Department faculty.

## 540. FUNDAMENTALS OF HOUSING

Fall term. Credit two hours. Consult with instructor prior to registration. Preregistration required. Mr. Bower.

An introductory survey of housing as a field of graduate study. Consideration of the spatial context and institutional setting of housing; the structure, operations, and performance of the housing market and the housebuilding industry; housing finance; the nature, operations, impact, and policy of government housing programs; contemporary housing problems and issues.

## 542. HOUSING MARKET ANALYSIS

Fall term. Credit three hours. Permission of the instructor is required. Mr. Ragatz.

Designed to provide a basic understanding of local housing market operations and mechanisms, including demand determinants such as demographic, economic, and institutional characteristics; supply determinants such as the quality, nature, and expected changes of the inventory; and market indicators such as price, vacancies, and real estate transactions. The first part of the course describes the traditional approach to housing market analysis. The second part describes and evaluates mathematical models in spatially locating required residential activities. Land use and transportation models are used as examples. A field problem is included.

## 545. SOCIAL ASPECTS OF HOUSING IN DEVELOPING COUNTRIES

Fall term. Credit three hours. Permission of the instructor is required. Mr. Villegas.

An institutional approach will be followed to study a selected group of problems which have a direct influence on the social aspects of housing and urban development planning. The course is divided into ten blocks or sections: (1) Introduction; (2) Social Institutions (Part I); (3) Health Institutions; (4) Social Institutions (Part II); (5) Consumer Institutions; (6) Political Institutions; (7) Educational Institutions; (8) Religious Institutions; (9) Administrative Institutions; (10) Profile of the Future.

**546. SOCIAL ASPECTS OF HOUSING IN DEVELOPING COUNTRIES**

Spring term. Credit three hours. Prerequisite: 545 and permission of instructor. Mr. Villegas.

The principal objective is to study a selected group of housing and planning developments, following the case method approach. The course has been divided into nine blocks or sections: (1) Development Strategies for Urban Marginal Areas: Squatter, Shantytowns, Slum Clearance; (2) Self-help Method; (3) Housing and Planning for Areas in the Initial Stages of Social and Economic Development; (4) New City in a City; (5) High-Rise Apartments; (6) Cooperative Housing; (7) City and Regional Planning, and Housing; (8) New Towns; (9) Rural Housing and Planning.

**547. SEMINAR ON URBAN MARGINAL AREAS IN DEVELOPING COUNTRIES**

Spring term. Credit three hours. Permission of the instructor is required. Mr. Villegas.

The principal seminar objectives are: to formulate criteria to evaluate the governments' planning strategies toward urban squatter and shantytown areas in Latin America and other developing countries; to analyze current research on political development aspects of such areas; and to study selected problems: building and construction, physical planning, consumer behavior, and informal socioeconomic organization.

**548. SOCIAL PROBLEMS IN HOUSING**

Fall term. Credit three hours. Mr. Morris.

A critical examination of individuals, families, and specific groups in relation to social requirements for housing units and neighborhoods. Factors related to the distribution of housing in society are analyzed and current housing programs and policies examined as they affect various groups. Special attention is given to problems of economically disadvantaged households.

**549. PRODUCTION OF HOUSING**

Spring term. Credit two hours. Mr. Bower.

An examination of the system of producing shelter in the United States, its structure and major processes. Focus will be on decision making within existing institutional constraints. Description and evaluation of major sub-systems including contractual and speculative homebuilding, the prefabrication industry, mobile home manufacturing, and production of rental housing. Some attention will be devoted to building of new towns and production of housing in conjunction with a number of special-purpose governmental programs.

**599. MASTER'S THESIS AND RESEARCH**

Fall and spring terms. Registration with permission of the instructor. Messrs. Beyer, Bower, Morris, and Villegas.

**600. SEMINAR IN CURRENT HOUSING ISSUES**

Spring term. Credit three hours. Prerequisite: 540 or permission of the instructor. Mr. Beyer.

This seminar focuses on a selected group of issues related to housing, both national and international in nature. The issues evaluated vary from year to year based on current importance and student interest. When possible, these are studied in the context of present or recent research, with emphasis on both subject content and methodology.

## 601. THE FUTURE OF THE HOUSE AND URBAN LIFE STYLES

Fall term. Credit three hours. Permission of the instructor is required. Mr. Villegas.

The course will analyze concepts including: transience of values in housing and urban development; housing and postindustrial society; transient environment; planned obsolescence; the rental revolution and mobile architecture; the interface of the aerospace industry and urban research.

## 602. HOUSING AND URBAN RESEARCH METHODOLOGY

Spring term. Credit three hours. Prerequisite: an introductory course in methods or statistics or permission of the instructor. Mr. Morris.

Considers the scientific process in terms of survey, experimental, and case study methods as these apply to research problems in housing and urban development. A selected major international research project will be evaluated, from development of the research proposal to reporting of the results. Actual research experience will be included in the course.

## 699. DOCTOR'S THESIS AND RESEARCH

Fall and spring terms, Registration with permission of the instructor. Messrs. Beyer, Bower, Morris, and Villegas.

## HUMAN DEVELOPMENT AND FAMILY STUDIES

Faculty: Alfred L. Baldwin, Clara P. Baldwin, Helen T. M. Bayer, W. Lambert Brittain, Urie Bronfenbrenner, John C. Condry, Robert H. Dalton, Edward C. Devereux, Jr., John Doris, Harold Feldman, Eleanor J. Gibson, Herbert Ginsburg, John S. Harding, Laurel Hodgden, William W. Lambert, Lee C. Lee, Eric Lenneberg, Harry Levin, Anne McIntyre, Margaret Parkman-Ray, Marian Potts, Henry N. Ricciuti, Robert R. Rodgers, George J. Suci.

Field Representative: John Doris, Martha Van Rensselaer Hall.

## MAJOR SUBJECTS

Child Development  
Child and Family Psychopathology  
Cognitive Development  
Early Childhood Education (Master's degree only)  
Family Relationships  
Social and Personality Development

## MINOR SUBJECTS

Child Development  
Child and Family Psychopathology  
Cognitive Development  
Early Childhood Education  
Family Relationships  
Social and Personality Development

Of the minor subjects listed above, Cognitive Development, Family Relationships, and Social and Personality Development are available as minor subjects for Ph.D. and Master's degree candidates both within and outside the Field; Child and Family Psychopathology, only to Ph.D. candidates in this Field or in closely related fields such as Psychology; Early Childhood Education, only to Ph.D. and Master's degree candidates in this Field. Child Development as a subject is interpreted as consisting of approximately equal proportions of Cognitive Development and Social and Personality Development; it is available as a minor subject only to students whose major is *outside* the Field.

**ADMISSION.** The Field does not have prescribed admission requirements in terms of undergraduate courses. Admission is based on evidence of ability to do advanced work. The majority of successful applicants have undergraduate majors in psychology, sociology, child development, or family relationships; however, students of high ability may be admitted regardless of undergraduate background. All applicants are required to submit their scores on the Aptitude Test of the Graduate Record Examination. Students whose native language is not English are required to take the test, but allowances for the language handicap are made in interpreting their scores.

**FINANCIAL AID.** The Field attempts to provide full financial support during the academic year for each graduate student who requests it, provided the student's work is satisfactory. About two-thirds of the graduate students in each academic year hold research assistantships or teaching fellowships which are nearly all of the standard type found in the statutory colleges at Cornell—fifteen hours of work required per week, stipend \$2,600 for nine months, plus tuition and the General Fee. Research assistantships and teaching fellowships are regarded as an integral part of graduate training, and a typical program for a Ph.D. candidate would include two years on a research assistantship, one year on a teaching fellowship, and one year on some other type of fellowship or traineeship. During the 1968-69 academic year, twenty-four students held research assistantships; thirteen, teaching fellowships; and twelve, traineeships from the National Institutes of Mental Health restricted to Human Development and Family Studies students. Eight held other fellowships or scholarships, and two received no financial support from the University.

**AIMS AND OPERATIONS OF THE FIELD.** The principal aim of the graduate program is to train students as research workers and college teachers. Professional experience is available in nursery school teaching and extension work (adult education). The program does *not* prepare students to be clinical psychologists, school psychologists, or family life counselors.

All students are expected to acquire a basic background in the behavioral sciences, and to master a broad base of knowledge of human development and of the family as a social system. The five subjects represent the principal areas of specialization in the Field. A graduate student ordinarily decides on an area of specialization at the beginning of his program and chooses as chairman of his Special Committee a faculty member representing this particular area.

Candidates for the Master's degree choose one minor subject in addition to the major. This minor subject may be either within or outside this Field. Doctoral candidates choose two minor subjects in addition to the major. At least one of these minor subjects must be taken outside the Field.

Master's degree programs ordinarily require one and one-half to two years for completion; doctoral programs, about four years. Students with relatively little preparation in psychology or sociology should plan on additional time to complete degree requirements. The only degrees offered in the Field are the three general degrees—M.A., M.S., and Ph.D. The M.A. and the M.S. are considered as equivalent. A research thesis forms an important part of the requirements for each degree. One semester of graduate-level training in statistics is required of all Master's degree candidates, and two semesters are required of all Ph.D. candidates. Some teaching experience will be required for degree candidates.

There is no language requirement for the Master's degree. Ph.D. candidates whose native language is English are required to demonstrate reading proficiency in one additional language, which must be French,

German, Spanish, or Russian. There is no language requirement for Ph.D. candidates whose native language is not English.

## Research and Study Opportunities

Approximately half of the research in Human Development and Family Studies is done in the departmental laboratories and nursery school in Martha Van Rensselaer Hall; the other half is done in other parts of the campus and in various community settings.

The departmental nursery school maintains a half-day program for three groups of children. An art laboratory is available for the investigation of creative activities in children from two to fifteen. Several experimental rooms are equipped with one-way vision screens and modern sound recording equipment. Two rooms are equipped for recording on TV video tape.

Several members of the Field are affiliated with the Cornell Center for Research in Education, and there are opportunities for some graduate students to participate in research projects and other activities organized by the Center. The Field cooperates with the Field of Psychology in sponsoring a joint program in developmental studies. The program emphasizes cognitive development and may be entered via either Field. Training in research skills in both Fields is recommended.

A major activity of the Field is the research and development program in early childhood education, one of seven such programs at different universities financed by the United States Office of Education. The Cornell program is directed by Professor Henry Ricciuti and involves eight members of the Human Development and Family Studies Graduate Faculty.

Students who elect Child and Family Psychopathology as a subject take a series of seminars and practicum intended to prepare them to do research in clinical settings. Several members of the Department faculty maintain fairly close relationships with the Tompkins County Mental Health Clinic, the Board of Cooperative Educational Services, and several nearby residential treatment centers; these settings are available for certain types of research projects. A training grant from the National Institutes of Mental Health provides support for three third-year graduate students each year in research internships in clinical centers in metropolitan areas such as New York and New Haven.

## Courses

### 323. COGNITIVE PROCESSES

Spring term. Credit three hours. Mr. Suci.

A survey of perceptual processes, thinking, problem solving, and language in children.

### 324. PIAGET'S APPROACH TO COGNITIVE DEVELOPMENT

Fall term. Credit three hours. Mr. Ginsburg.

An introduction to Piaget's theories and research concerning cognitive development from infancy to adolescence.

### 342. THE DEVELOPMENT OF CREATIVE THINKING

Fall term. Credit three hours. Mr. Brittain.

A study of various theories of creativity and a review of the research on creative behavior.



358. THEORIES OF THE MARITAL DYAD

Spring term. Credit three hours. Mr. Feldman.

Selective theories of the basic disciplines in social psychology, sociology, and psychology will be examined for their pertinence to understanding the marital dyad.

363. THE STUDY OF FAMILY INTERACTION

Fall term. Credit three hours. Mrs. Parkman-Ray.

Study of the theoretical and research literature on the modern American family with the aim of understanding the interpersonal relationships of family members.

372. PERSPECTIVES ON POVERTY

Fall term. Credit four hours. S-U grades optional. Mr. Feldman.

Conflicting viewpoints will be presented about the extent, nature, causes, and remedies of economic poverty. A number of experiences with the poor will be offered, including a short time live-in exchange, a continuing field experience during the term, and a film series.

374. BEHAVIOR AND DEVELOPMENT IN INFANCY

Fall term. Credit three hours. Mr. Ricciuti.

An examination of characteristic developmental changes in infant behavior from birth to approximately two years.

376. RESEARCH PRACTICUM ON THE FAMILY IN POVERTY

Spring term. Credit three hours. S-U grades only. Mr. Feldman.

The interview method will be used to study low-income families. Students will take part in an on-going project by attending staff meetings, and by gathering and analyzing data.

423. SEMINAR ON EARLY LEARNING

Fall term. Credit three hours. Miss Potts.

The seminar will deal with language acquisition, the effects of language on learning, and the effects of specific environmental influences on cognitive development.

425. INTELLECTUAL DEVELOPMENT OF POOR CHILDREN

Spring term. Credit three hours. Mr. Ginsburg and Mrs. Parkman-Ray.

500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit to be arranged. Departmental faculty.

Experience in small-scale research projects, or in specialized aspects of a larger project. Each graduate student holding a research assistantship registers for three credit hours under the direction of the faculty member whom he is assisting.

501-502. SURVEY OF CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

Fall and spring terms. Credit three hours each semester. Each semester may be taken independently for credit. Mr. Harding and Departmental faculty.

Designed to acquaint entering graduate students with (a) the major theoretical approaches used in the study of child development and family relationships; (b) the major journals, handbooks, and other compilations of empirical findings; and (c) the members of the Department faculty available for the supervision of graduate research.

#### 504-505. RESEARCH METHODS IN CHILD DEVELOPMENT AND FAMILY RELATIONSHIPS

Fall and spring terms. Credit three hours a term. Each semester may be taken independently for credit. Mr. Rodgers.

The first semester will focus on learning to evaluate and develop research designs and methods, with special emphasis on studies of process and the measurement of change. The second semester will emphasize the development of skill in the use of electronic computer equipment for research purposes.

#### 511. ADULT-CHILD INTERACTION IN NATURALISTIC SITUATIONS

Spring term. Credit three hours. Mrs. Baldwin.

#### 514. CLINICAL DEVIATIONS IN INTELLECTUAL AND SENSORY-MOTOR DEVELOPMENT

Spring term. Credit three hours. Mr. Doris.

Designed to acquaint students with the clinical and research literature on mental retardation, cerebral palsy, and sensory defects.

#### 517. SEMINAR IN NURSERY PROCEDURES

Fall term. Credit three hours.

Exploration of research related to the nursery school; study of methods of working with parents, supervision of students, and administrative procedures in the nursery school.

#### 522. SEMINAR ON COGNITIVE DEVELOPMENT

Spring term. Credit three hours. S-U grades optional. Admission by permission of the instructor. Mr. Ginsburg.

The seminar will focus on a cognitive problem to which Piaget has contributed research and theory.

#### 523. SEMINAR IN COGNITIVE PROCESSES

Spring term. Credit four hours. Admission by permission of the instructor. Mr. Suci.

The student will contribute to a review and evaluation of the current status of research and theory in cognitive development. He will design and carry out an experiment to fill some gap in our knowledge about cognition.

#### 524. SEMINAR ON FREUD

Spring term. Credit three hours. Mr. Harding.

There will be a systematic examination of the development of Freud's concepts and theories from 1885 to 1935, plus consideration of the present status of research on a number of topics in psychoanalytic psychology.

#### 537. SEMINAR ON THE DEVELOPMENT OF VALUES

Spring term. Credit three hours. Miss Lee.

#### 560A. SEMINAR IN PSYCHOPATHOLOGY

Fall term. Credit three hours. Mr. Dalton.

Primary emphasis will be upon theory and empirical findings with respect to anxiety and the neurotic reactions.

#### 560B. SEMINAR IN PSYCHOPATHOLOGY

Spring term. Credit three hours. Miss McIntyre.

Primary emphasis will be on theory and empirical research on childhood disorders and adult psychotic reactions.

562. THE FAMILY, SOCIETY, AND THE INDIVIDUAL

Fall term. Credit three hours. S-U grades optional. Mr. Devereux.

A general introduction for graduate students to the uses of sociological theory and research in the study of the family, with particular reference to the relationships between the family and society, and between the family and its individual members.

563. SEMINAR ON INTERACTION IN EMOTIONALLY DISTURBED FAMILIES

Spring term. Credit three hours. Mrs. Parkman-Ray.

568. SOCIOLOGICAL FACTORS IN PSYCHOPATHOLOGY

Fall term. Credit three hours. Admission by permission of instructor. Mr. Devereux.

This seminar will explore the research literature on sociological factors in the family, the community, the institution, and the broader society relevant for understanding the causes and treatments of deviant behavior and pathological personality organization.

574. SEMINAR ON INFANT BEHAVIOR AND DEVELOPMENT

Spring term. Credit three hours. Mr. Ricciuti.

The seminar will deal with selected topics of current importance as research issues in the field of infant behavior and development.

599. MASTER'S THESIS AND RESEARCH

Fall and spring terms. Credit to be arranged. S-U grades exclusive. Registration with permission of the instructor. Department faculty.

606. RESEARCH PRACTICUM: FAMILY STRUCTURE AND PERSONALITY DEVELOPMENT

Spring term. Credit three hours. Messrs. Bronfenbrenner, Devereux, and Rodgers.

A practicum utilizing the resources of an on-going program of research. Members of the seminar participate in the design, critical analysis, and execution of research studies.

609. SEMINAR ON PROJECTIVE TECHNIQUES

Fall term. Credit three hours. S-U grades optional. Admission by permission of instructor. Miss McIntyre.

611. EVALUATION PRACTICUM: STUDY OF THE INDIVIDUAL PERSONALITY, DEVIANT AND NORMAL

Spring term. Credit three hours. Admission by permission of the instructors. Prerequisite: 613, 560A and B, or equivalents. Two-hour class session, and additional hours to be arranged. Messrs. Doris and Ricciuti, and Miss McIntyre.

Provides experience in the description and evaluation of the psychological function of individual children, both deviant and normal, in the context of relevant social and familial factors.

613. INDIVIDUAL INTELLIGENCE TEST PROCEDURES

Fall term. Credit four hours. Admission by permission of the instructor. Three-hour class session, with additional hours for testing and supervision to be arranged. Mr. Doris.

The primary purpose is to prepare a student for participation in 611, and it is a prerequisite for that practicum.

**621. SEMINAR IN THE EXPERIMENTAL STUDY OF SOCIAL BEHAVIOR**

Spring term. Credit four hours. Mr. Condry.

An introduction to theory and research in social behavior at the graduate level. The seminar utilizes the readings and discussions of 321 as a basis for further readings and the design of research.

**623. ADVANCED SEMINAR IN COGNITIVE PROCESSES**

Fall term. Credit three hours. Permission of instructor required. Mr. Suci.

The student will explore in depth a problem of his own choosing.

**660. PERSONALITY DEVELOPMENT IN CHILDHOOD**

Fall term. Credit three hours. Miss Lee.

This is the graduate section of 360. In addition to covering the lectures and readings for that course, students will meet separately for weekly discussions and do additional reading.

**663. SEMINAR ON OBSERVATIONAL METHODS**

Spring term. Credit three hours. Admission by permission of the instructor. Mrs. Parkman-Ray.

Detailed examination of a variety of methods of gathering and analyzing observational data, especially data on the family. Members of the seminar will participate in the design and execution of a research study.

**665. SMALL GROUPS**

Spring term. Credit three hours. Prerequisite: 562. Mrs. Parkman-Ray.

A systematic review of the literature on behavior in small groups. The seminar will attempt to formulate criteria for the extension of propositions drawn from the study of ad hoc groups to real groups, particularly the family.

**699. DOCTOR'S THESIS AND RESEARCH**

Fall and spring terms. Credit to be arranged. Registration with permission of the instructor. Department faculty.

## INDUSTRIAL AND LABOR RELATIONS

Faculty: Robert L. Aronson, Isador Blumen, George W. Brooks, Bert R. Brown, Ralph N. Campbell, M. Gardner Clark, Alice H. Cook, Donald E. Cullen, Robert E. Doherty, W. Duane Evans, Robert H. Ferguson, Felician F. Foltman, Ivor Francis, William W. Frank, Frederic Freilicher, Walter Galenson, Gerald Gordon, James A. Gross, Leopold W. Gruenfeld, Kurt L. Hanslowe, George H. Hildebrand, Wayne L. Hodges, Vernon H. Jensen, Milton R. Konvitz, A. Gerd Korman, David B. Lipsky, Duncan M. MacIntyre, Philip J. McCarthy, Jean T. McKelvey, Emil A. Mesics, Frank B. Miller, David G. Moore, James O. Morris, Maurice F. Nufeld, Robert L. Raimon, Robert F. Risley, Ned A. Rosen, Fred Slavick, N. Arnold Tolles, Harrison M. Trice, William J. Wasmuth, William F. Whyte, Lawrence K. Williams, John P. Windmuller.

Field Representative: Lawrence K. Williams, 101 Ives Hall.

**MAJOR OR MINOR SUBJECTS**

Collective Bargaining, Labor Law,  
and Labor Movements  
Economic and Social Statistics  
Labor Economics and Income  
Security  
Manpower Studies  
Organizational Behavior

**MINOR SUBJECTS ONLY**

Industrial and Labor Relations  
Problems (available only for stu-  
dents majoring in other Fields of  
the Graduate School)  
International and Comparative  
Labor Relations

**ADMISSIONS REQUIREMENTS.** All applicants whose native language is English are required to take the aptitude portion of the Graduate Record Examination. All applicants whose native language is not English are required to take the TOEFL language test. For admission to the Ph.D. program, a Master's degree or equivalent is usually required; direct admission is possible in cases of exceptional promise.

**LANGUAGE REQUIREMENTS.** The Field offers a special professional degree, the Master of Industrial and Labor Relations (M.I.L.R.), which is essentially based on course work. There is no thesis requirement nor is there a requirement for proficiency in a foreign language. For the Master of Science degree and the Ph.D. degree, the matter of foreign language requirements is left to each individual's Special Committee.

**M.I.L.R. EXAMINATION.** The M.I.L.R. Program is designed to provide broad coverage within the Field and some opportunity for advanced specialized work. The program requires four semesters, not to include summer sessions, and a total of fourteen courses, nine of which are required. The requirements for this degree are fulfilled by satisfactory performance in these courses or seminars.

**M.S. EXAMINATION.** The final examination for the Master of Science degree includes both a test of subject matter competence in the major and minor fields and a defense of the Master's thesis. The examination is both written and oral. The completed thesis must be submitted to the Committee sufficiently in advance to ensure that the Final Examination can be scheduled and announced with at least fifteen days notice.

**PH.D. EXAMINATION.** In addition to the comprehensive Admission to Candidacy Examination, the Field of Industrial and Labor Relations may administer a preliminary examination prior to admitting students to the doctoral program. A defense of the doctoral dissertation is, of course, required. Rules of the Field governing this Final Examination include the announcement of it to the faculty of the Field by the chairman of the Special Committee at least fifteen days before the scheduled date, and the provision that the chairman also invite scholars from outside the Field, where appropriate.

The Field requires the acquisition of teaching experience during study for the Ph.D.

## COLLECTIVE BARGAINING, LABOR LAW, AND LABOR MOVEMENTS

Mr. Jensen, chairman; Mrs. Cook, Mrs. McKelvey, Messrs. Brooks, Cullen, Doherty, Freilicher, Gross, Hanslowe, Konvitz, Korman, Lipsky, Morris, Neufeld, Windmuller.

This subject matter area is staffed by lawyers, institutional economists, and economic and social historians.

Departmental Faculty members specialize in the following three areas: (a) the study of the legal framework within which labor-management relations systems in the United States have developed; (b) the study of the history and structure of various components of the American trade union movement at the local, national, and confederation levels; and (c) the study of institutions, practices, and principles relevant to understanding how parties at interest resolve conflicts over the conditions of the labor contract.

## ECONOMIC AND SOCIAL STATISTICS

Mr. McCarthy, chairman; Messrs. Blumen, Evans, and Francis.

Staff members of the Department are mathematical statisticians interested in the application of their area of expertise to the social studies. They offer students an opportunity to study how the tools of mathematical statistics help in describing and analyzing socioeconomic phenomena and how various hypotheses can be tested quantitatively.

## LABOR ECONOMICS AND INCOME SECURITY

Mr. Raimon, Chairman; Messrs. Aronson, Clark, Ferguson, Galenson, Hildebrand, MacIntyre, Slavick, Tolles.

This Department is staffed primarily by economists. Such different specialized areas within economics as micro- and macro-, institutional and theoretical, welfare, developmental, and comparative economics are represented. In the area of the social insurances, scholarly competence and recognition do not require extensive formal training in economics, although there are also opportunities to apply economics to this subject.

Scholarly interests of students in this subject matter area lie primarily in two directions. Some seek to generalize about the ways in which movements of prices, wages, and workers are related and to study the mechanisms of various labor markets. Others examine private and/or public programs designed to insure the working population against those risks of living in an industrial society which can be expressed in money terms.

## MANPOWER STUDIES

Mr. F. Miller, chairman; Messrs. Campbell, Foltman, Frank, Hodges, Risley, Wasmuth.

This Department is staffed by students of management and organizational problems as well as economists with manpower interests. Manpower management has two main facets. First, the conventional study of the personnel function is directed at understanding how the single employing organization deals with its human resources: e.g., how does a firm go about staffing (recruitment, selection, placement); training and development activities; or managing reward and punishment systems. Second, the study of manpower supply and training problems at the community and national levels is increasingly a matter of critical public policy. This "macro-level" aspect of manpower studies and the interplay between public and organizational manpower processes are foci of Departmental teaching and research.

## ORGANIZATIONAL BEHAVIOR

Mr. Whyte, acting chairman; Messrs. Brown, Gordon, Gruenfeld, Rosen, Trice, Williams.

This Department is staffed by behavioral scientists including psychologists, social psychologists, sociologists, and cultural anthropologists, all of whom are concerned with individuals in work organizations and in industrial society. The major opportunity offered by the Department is for study of the nature

of industrial society as a context for complex work organizations, or the study of such organizations *per se*, or the study of the behavior of small groups and individuals which are components of such organizations.

## INTERNATIONAL AND COMPARATIVE LABOR RELATIONS

Mr. Galenson, chairman; Mrs. Cook, Messrs. Clark, Hildebrand, Morris, Neufeld, Whyte, Windmuller.

Members of this Department are also attached to one of the other teaching departments. In this subject matter area, students have an opportunity to examine the following two major problem areas. The first is a comparative analysis of the ways in which industrial societies other than the United States handle labor market problems, i.e., labor movements, patterns of industrial dispute settlement, the nature of governmental intervention both in regulating labor-management conflict and in protecting workers from the risks of industrial life. The second is the study of social institutions and economic conditions in developing countries which facilitate or impede industrial development.

## Courses

### COLLECTIVE BARGAINING, LABOR LAW, AND LABOR MOVEMENTS

#### 500. COLLECTIVE BARGAINING I

Fall and spring terms. Credit three hours. Preferably taken after or concurrently with 502. Messrs. Cullen, Gross, Jensen, or Lipsky.

A comprehensive study of collective bargaining with special emphasis being given to philosophy, structures, process of negotiations, and administration of agreements. Attention will also be given to problems of handling and settling industrial controversy, the various substantive issues, and important developments and trends in collective bargaining.

#### 501. COLLECTIVE BARGAINING II

Spring term. Credit three hours. Prerequisite: 500 or equivalent. Messrs. Cullen, Gross, Jensen, or Lipsky.

A detailed study of contract making and administration with particular reference to recent trends and problems in collective bargaining. Attention will be given to several representative industries, and prevailing agreements and case problems will be studied.

#### 502. LABOR RELATIONS LAW AND LEGISLATION

Fall or spring term. Credit three hours. Messrs. Freilicher, Hanslowe, or Konvitz.

A survey and analysis of the labor relations law with an examination of the extent to which the law protects and regulates concerted action by employees in the labor market. The legal framework within which the collective bargaining takes place is considered and analyzed. Problems of the administration and enforcement of the collective agreement are considered, as are problems of protecting the individual member-employee rights within the union.



**503. ARBITRATION**

Spring term. Credit three hours. Prerequisite: 500. Mrs. McKelvey, Messrs. Gross, Jensen, or Lipsky.

A study of the place and function of arbitration in the field of labor-management relations, including an analysis of principles and practices, the law of arbitration, preparation of briefs or oral presentation, and the work of the arbitrator, umpire, or impartial chairman.

**504. LABOR DISPUTE SETTLEMENT**

Fall or spring terms. Credit three hours. Prerequisite: for graduates 500. Mrs. McKelvey, Mr. Gross, Mr. Jensen, or Mr. Yaffe.

A historical and contemporary study of the role of government in the adjustment of labor disputes, including such topics as the Railway Labor Act, Taft-Hartley Act, and state and federal laws governing emergency and public employment disputes. The course will also cover the leading administrative agencies in this field, including the Federal Mediation and Conciliation Service; state mediation agencies with special emphasis on the New York State Board of Mediation; and municipal mediation services. Various governmental techniques for dealing with labor disputes, including injunctions, seizure, fact finding, and compulsory arbitration will be analyzed. Labor dispute settlement procedures in the private and public sectors will be compared.

**505. LABOR UNION HISTORY AND ADMINISTRATION**

Fall term. Credit three hours. Mrs. Cook, Mr. Brooks, Mr. Korman, or Mr. Neufeld.

A presentation of the history of labor in America, with some reference to colonial and early nineteenth-century labor, but with emphasis upon post-Civil War trade union development. An analysis of the structure and functions of the various units of labor organization, ranging from the national federation to the local union. Some consideration will be given to special problems and activities, such as democracy in trade unions and health and welfare plans, as well as to various types of unions.

**506. READINGS IN THE HISTORY OF INDUSTRIAL RELATIONS IN THE UNITED STATES**

Fall term. Credit three hours. Prerequisite: 505 or equivalent. Mrs. Cook, Mr. Korman, or Mr. Neufeld.

A seminar covering, intensively and in historical sequence, the key documents, studies, legislative investigations, and memoirs concerning American industrial relations systems. Primarily designed to aid students in orienting themselves systematically and thoroughly in the field. Among the authors and reports covered are E. P. Thompson, John R. Commons, Norman Ware, Lloyd Ulman, the Abram Hewitt hearings, the Henry W. Blair hearings, the United States Industrial Commission, Philip Taft, Paul F. Brissenden, the United States Commission on Industrial Relations, Theodore W. Glocker, George E. Barnett, Frederick W. Taylor, Henry Gantt, Mary Parker Follett, Irving Bernstein, and Walter Galenson.

**507. THEORIES OF INDUSTRIAL RELATIONS SYSTEMS**

Spring term. Credit three hours. Prerequisite: 505 or equivalent. Mrs. Cook, Mr. Korman, or Mr. Neufeld.

An examination of the leading theories concerning the origins, forms, organization, administration, aims, functions, and methods of industrial relations systems. Among the theories studied are those formulated by Karl



Marx, Mikhail Bakunin, Georges Sorel, Vladimir Lenin, Lujo Brentano, Beatrice and Sidney Webb, Herbert Croly, Antonio Gramsci, Selig Perlman, Frank Tannenbaum, the Guild Socialists, Karl Polanyi, and Clark Kerr, Frederick Harbison, John Dunlop, and Charles A. Myers.

#### 508. POVERTY AND SOCIAL POLICY

Fall and spring terms. Credit three hours. Mr. Konvitz.

A study of public policy with respect to poverty from colonial times to the current "war on poverty" in the United States. The Report and the Supplemental Studies by the (Kerner) National Advisory Commission on Civil Disorders, the Report by the President's Commission on Law Enforcement and Administration of Justice, and the Report of the Citizens' Board of Inquiry in Hunger and Malnutrition will be among the materials studied.

#### 509. READINGS IN THE LITERATURE OF AMERICAN RADICALISM AND DISSENT

Fall and spring terms. Credit three hours. Mr. Neufeld.

Each term this course will concentrate on a different historical aspect of American radicalism and dissent. Examples of the possible range of topics and writers include: *agrarian reform*, Thomas Skidmore, George Henry Evans, and Ignatius Donnelly; *anarchism*, Josiah Warren, William D. Haywood, Emma Goldman, and Paul Goodman; *communism*, John Reed, Jay Lovestone, and William Z. Foster; *economic dissent*, Henry George, Thorstein Veblen, and Francis Everett Townsend; *equal rights for Negroes and black nationalism*, William E. B. DuBois and Marcus Garvey; *fascism*, Father Charles Edward Coughlin and Gerald L. K. Smith; *peace movements*, Jane Addams, Emily Balch, and A. J. Muste; *religious radicalism*, Roger Williams, Tom Paine, and Robert Green Ingersoll; *social planning*, John Humphrey Noyes and Margaret Sanger; *socialism*, Langdon Bylesby, William Heighton, Daniel De Leon, Morris Hillquit, and William English Walling; *utopianism and communitarianism*, Edward Bellamy, Albert Brisbane, and Austin Tappan Wright; and *women's rights*, Margaret Fuller, Elizabeth Cady Stanton, and Susan B. Anthony.

#### 580. ADMINISTRATIVE TRIBUNALS

Spring term. Credit three hours. Mr. Hanslowe.

An examination of the law controlling administrative agencies, including executive departments, in their complex tasks of carrying out various governmental programs. Legislative bodies determine general programs, and administrative tribunals make them more specific through making rules, deciding cases, investigating, prosecuting, and supervising. One important focus is on procedural safeguards and on the allocation and control of power in decision making. Another central inquiry is how to accommodate procedural fairness to the efficient accomplishment of legislative purposes. The general quest is for understanding principles of exertion of governmental authority and principles of justice that cut across functions of federal, state, and local tribunals and their relation with reviewing courts and with legislative and executive bodies.

#### 600. SEMINAR IN LABOR RELATIONS LAW AND LEGISLATION

Fall or spring term. Credit three hours. Permission of the instructor required. Mr. Freilicher, Mr. Hanslowe, or Mr. Konvitz.

An intensive study of controversial aspects of labor relations law and legislation in the United States, with concentration on questions of special interest because of their impact on public opinion as well as on labor-management

relations. Some of the problems that may be analyzed are national emergency disputes; legal aspects of labor relations in the public sector; remedies for violations of section 8(a)(3) and (5) of the NLRA; common situs picketing; enforcement of arbitration clauses and awards; the duty to bargain about subcontracting and plant removal; problems arising from multiemployer bargaining; regulation of labor relations in agriculture; a union's duty of fair representation; discrimination on the basis of sex and race under Title VII of the Civil Rights Act of 1964.

#### 601. COLLECTIVE BARGAINING

Fall and spring terms. Credit three hours. Mrs. McKelvey, Mr. Cullen, Mr. Gross, or Mr. Jensen.

An analysis with particular emphasis upon the negotiation process, contract issues of current and future significance, and student research papers.

#### 602. PROBLEMS IN LABOR LAW

Fall or spring terms. Credit three hours. Mr. Freilicher and Mr. Hanslowe.

Intensive analysis of selected groups of legal problems arising out of labor relations and arbitrations, based on documentary materials including briefs, minutes, court and agency proceedings. Weekly or biweekly written reports.

#### 603. GOVERNMENTAL ADJUSTMENT OF LABOR DISPUTES

Spring term. Credit three hours. Mrs. McKelvey, Mr. Gross, or Mr. Jensen.

A study of particular problems of the role of the government in the adjustment of labor disputes in the public and the private sector. Opportunity is afforded to investigate and analyze the various common dispute-settlement techniques and to investigate particular governmental agencies and their operations.

#### 605. RESEARCH SEMINAR IN THE HISTORY, ADMINISTRATION, AND THEORIES OF INDUSTRIAL RELATIONS IN THE UNITED STATES

Fall or spring terms. Credit three hours. Prerequisite: 506 and 507, or permission of the instructor. Mrs. Cook, Mr. Brooks, Mr. Korman, Mr. Morris, or Mr. Neufeld.

Intensive studies in theories of industrial relations, the social and political history of workers in urbanizing and industrializing communities, the history of ideas which impelled the labor movement, the history and government of individual unions and confederations of unions, the development of ideas in the management of personnel, and comparative studies of American, European, and non-European industrial relations systems. The areas of study will be determined by the instructor offering the seminar.

#### 606. LABOR AND GOVERNMENT FROM THE 1920s TO TAFT-HARTLEY

Fall term. Credit three hours. Prerequisite: 505 and consent of the instructor. Mrs. Cook.

An historical survey of the pre-New Deal, the New Deal, World War II, and the immediate post-war periods, culminating in the passage of the Taft-Hartley Act. The course will trace the development and explore the nature and effect of government policy on labor welfare and labor relations legislation. Students will each select a specific event or problem for intensive research on which they will report to the class and prepare a paper.

607. COLLECTIVE BARGAINING IN PUBLIC EDUCATION

Spring term. Credit three hours. Permission of the instructor is required. Mrs. Egner and Mr. Doherty.

The seminar will study the legal, financial, administrative, and educational problems raised by collective bargaining in the public schools. Major attention will be directed at existing statutes covering the employment arrangement in public schools, the subject matter and administration of collective agreements, the ideological postures of teacher organizations, the resolution of negotiating impasses. Individual and group research projects will be required.

609. PROFESSIONALS, WHITE-COLLAR WORKERS, AND THEIR ORGANIZATIONS

Spring term. Credit three hours. Offered in even-numbered years only. Prerequisite: permission of the instructor. Mrs. Cook.

Attention will be directed to characteristics of professional and clerical workers in the white-collar section of the work force. The problems of professionals, both self-employed and salaried, will be considered. A variety of professional organizations and of trade unions will be studied as responses to the collective needs of both groups. The distinctions arising from the conditions of public and private employment will also be considered.

680. RESEARCH SEMINAR IN THE HISTORY OF LABOR IN THE NINETEENTH CENTURY

Fall term. Credit three hours. Offered in odd-numbered years only. Mr. Korman.

A seminar in the social history of the nineteenth century devoted to the study of workers in urbanizing and industrializing communities. Research ventures will extend across the various fields of history, combining traditional labor history with aspects of urban and business history.

699. DIRECTED STUDIES

Fall and spring terms. Credit to be arranged.

For individual research under the direction of a member of the faculty.

LAW 409. LABOR LAW

Fall term. Credit three hours. Mr. Hanslowe or Mr. Oberer.

LAW 523. PROBLEMS OF LABOR RELATIONS IN PUBLIC EMPLOYMENT

Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Oberer.

ECONOMIC AND SOCIAL STATISTICS

510. ECONOMIC AND SOCIAL STATISTICS

Fall and spring terms. Credit three hours. Mr. McCarthy.

A nonmathematical course for students in the social studies without previous training in statistical method. Emphasis will be placed on discussion of technical aspects of statistical analysis and on initiative in selecting and applying statistical methods to research problems. The subjects ordinarily covered will include analysis of frequency distributions, regression and correlation analysis, and topics from the area of statistical inference.

**610. ECONOMIC AND SOCIAL STATISTICS**

Fall term. Credit three hours. Prerequisite: permission of the instructor. Mr. Evans.

This course is directed primarily toward the basic concepts underlying quantification in economics, and an examination of how these requirements are realized in practice. It is intended to familiarize students with the tools used to analyze the labor force, employment, unemployment, production, value-added, productivity, labor costs, prices, capital stocks, etc.; determine what they mean; their proper areas of application; and their limitations. Topics in the methodology of economic statistics, including time series analysis and index number problems, will be reviewed.

**614. THEORY OF SAMPLING**

Fall term. Credit three hours. Prerequisite: calculus and at least one semester of mathematical statistics. Mr. McCarthy.

A companion course to 310, stressing the development of the fundamentals of sampling theory. Attention will be paid to recent progress in the field. Occasional illustrations of the application of the theory will be given.

**699. DIRECTED STUDIES**

Fall and spring terms. Credit to be arranged.

For individual research under the direction of a member of the faculty.

**MANPOWER STUDIES****560. MANPOWER AND ORGANIZATION MANAGEMENT**

Alternate terms. Credit three hours. Prerequisite: 520 or 521. Mr. Foltman, Mr. Miller, or Mr. Wasmuth.

A basic graduate course covering the major areas of manpower and organizational policy as they relate to human behavior and work organizations. Intensive consideration will be given to such aspects of personnel work as selection and placement, compensation, training and development, employee-employer relations, health and safety, employee benefits and services, and personnel research. The course will examine how the conduct of the personnel function affects attainment of all organizational objectives. In addition, the personnel and industrial relations occupations will be examined in terms of their career patterns and organizational role.

**561. OCCUPATIONAL ASPECTS OF MANPOWER STUDIES**

Spring term. Credit three hours. Mr. Miller.

First, this course examines the job analysis process and its conventional contributions to various personnel activities. Next it examines professional and organizational careers, especially with an eye to their accessibility and adaptability to poor, undereducated, and otherwise disadvantaged elements in the population. Finally, the course includes individual student projects which consist of preparing job descriptions of various career stages of one high-talent occupation, beginning with the least demanding and ending with the most demanding. These projects will be examined by outside manpower experts in the appropriate specialty.

**562. ADMINISTRATIVE THEORY AND PRACTICE**

Spring term. Credit three hours. Prerequisite: 520 or permission of the instructor. Mr. Campbell.

Analysis of the role of the decision-maker in carrying out his administra-

tive functions. Consideration will be given to organizational structure and relationships, process of planning and decision making, measurement and control, and the direction of work. Basic theories from scientific management, bureaucratic studies, and human relations research will be analyzed with regard to their usefulness to the practicing administrator. Current practices will be evaluated against research findings. Cases will be used frequently.

#### 563. MANPOWER PROBLEMS AND RESEARCH

Fall term. Credit three hours. Mr. Niland.

The course treats recent and on-going research into problems of manpower rationalization in the United States. Selected projects, such as those sponsored under the Manpower Development and Training Act and by the National Science Foundation, are examined in detail. Issues to be covered from these sources include manpower mobility, development, utilization, and forecasting. The approach is primarily to issues at a macro level, using the economist's tools of analysis.

#### 564. PUBLIC POLICY AND DEVELOPMENT OF HUMAN RESOURCES

Fall term. Credit three hours. Mr. Foltman.

Analysis of the need for development of human resources, trends in work force requirements and implications for public policy, the role of government and of educational institutions in providing development programs, and the effectiveness of such programs. Examination of the rationale, organization, and administration of specific programs, such as apprenticeship; vocational and technical schools; technical institutes; university programs for development of technical, scientific, and managerial skills; and the foreign technical assistance program. Implications and problems of public support.

#### 565. PERSONNEL SELECTION AND PLACEMENT

Spring term. Credit three hours. Prerequisite: 210, 510 or equivalent; permission of the instructor is required for non-ILR students. Mr. Rosen or Mr. Trice.

A study of the employment function in personnel administration. Designed to analyze the techniques and devices used in the recruitment, interviewing, testing, selection, and placement of personnel. Emphasis is placed on applied psychological measurement principles and techniques. Interviews, personal history analysis, psychological tests, and the evaluation of these procedures in terms of appropriate criteria of success on the job will be considered in detail.

#### 566. ADMINISTRATION OF COMPENSATION

Fall term. Credit three hours. Prerequisite: 360, 521, 560 or equivalent.

The development and administration of wage and salary programs with major emphasis on internal considerations. Subjects include program principles, objectives, and policies; organization of the function; and procedures to implement policies. Topics include job and position analysis; preparation of description-specifications; job evaluation; incentive applications; wage and salary structures; the use of wage surveys; supplemental payments, including premium pay, bonuses, commissions, and deferred compensation plans; and use of automatic increment provisions. Case studies and assigned projects will cover selected programs.

#### 567. MANAGEMENT AND LEADERSHIP DEVELOPMENT

Fall term. Credit three hours. Mr. Campbell or Mr. Foltman.

Study of the factors affecting the growth and development of managers and

leaders in industrial and other organizations. Consideration is given to organizational environment, formal and informal developmental programs, leadership theory, and individual attitudes and beliefs. Special emphasis is given to analysis of specific case studies of actual practice.

#### 568. CASE STUDIES IN PERSONNEL ADMINISTRATION

Fall term. Credit three hours. Mr. Wasmuth.

A seminar devoted to analysis of personnel management activities and their impact on organizational objectives and administration. Cases, incidents, and field data from a variety of institutional settings will provide a framework for examining the various roles played by personnel managers. When appropriate, attention will be given to the evolution and formalization of personnel activities within growing small businesses. Field work and preparation of individual cases for class presentation are required.

#### 569. DESIGN AND ADMINISTRATION OF TRAINING PROGRAMS

Spring term. Credit three hours. Mr. Foltman and Mr. Campbell.

The development of education and training programs in government, business, labor, and voluntary organizations. Attention will be given to the role of line and staff and to problems and techniques in policy determination, the identification of training needs, and the design, implementation, and evaluation of programs. Case studies will focus on the philosophy and administration of selected training programs.

#### 570. OCCUPATIONAL COUNSELING AND CAREER GUIDANCE

Spring term. Credit three hours. Mr. Campbell.

The philosophy, theory, methods, and problems of counseling as related to employability, planning, employment, career guidance learning and training, and work discipline. The role of the counselor will also be considered, including psychological and ethical aspects, development of effective relationships with individuals and agencies important to the counseling function, and utilization of sources of job and career information. Topics will also include methods such as structured and nondirective interviews, biographical data, tests and measurements, and problems such as developing rapport, avoiding overdependence, securing commitment, and encouraging growth, development, and emotional maturity.

#### 660. MANPOWER AND ORGANIZATION MANAGEMENT

Fall and spring terms. Credit three hours. Mr. Foltman and Department faculty.

A seminar in which intensive study will center in one or two specific areas of manpower and organization management. Topics will be selected jointly by student and instructor; examples are: manpower planning and forecasting; compensation; justice processes; training and development; and other organizational manpower processes. Individual or group research may also focus on external influences or organizational manpower policies, practices, and strategies.

#### 662. SIMULATION WORKSHOPS AND MANAGEMENT TRAINING

Fall term. Credit three hours. Mr. Wasmuth.

The seminar will be conducted through the technique of simulation applied to a rehabilitation workshop. Although the substantive material relates to workshop management, simulation as an approach to training managers has wider and growing importance. The key factor in workshop simulation is the high degree of involvement of participants in setting goals, and identify-

ing problems and possible solutions. The seminar will focus on major problem areas in the organization and administration of sheltered workshops. Students are provided with realistic problem-solving situations. A variety of manpower aspects of the management process and the dynamic changes which occur in organizations will be considered. The content of the seminar will be research findings, selected readings, and lectures.

#### 667. CURRENT ISSUES AND RESEARCH IN HUMAN RESOURCES DEVELOPMENT

Fall and spring terms. Credit three hours.

A graduate seminar centering on selected issues and relevant research involved in the development of managerial and work-force skills (particular emphasis to be determined with the group). Papers and class discussions might concentrate on such topics as management development, impact of technological change on training programs, development of scientific and professional personnel, or labor union education.

#### 668. CASE STUDIES IN ORGANIZATIONAL BEHAVIOR, COMMUNICATION, AND PUBLIC OPINION

Spring term. Credit three hours. Mr. Hodges.

A seminar dealing with representative cases and problems in the public and in-plant relationship of industry and labor, with particular emphasis on employee communications and community relations.

#### 699. DIRECTED STUDIES

Fall and spring terms. Credit to be arranged.

For individual research under the direction of a member of the faculty.

### ORGANIZATIONAL BEHAVIOR

Graduate students majoring or minoring in the area of organizational behavior will normally complete the core offering in this area, Organizational Behavior I and II (520, 521). Depending upon the nature of the program of the individual student, both courses may be taken in the same term, or one may precede the other. In addition, graduate students majoring in organizational behavior will normally take 524-525, Behavioral Research Theory, Strategy and Methods I and II. (Exemptions and exceptions are made on an individual basis.)

#### 520. ORGANIZATIONAL BEHAVIOR I

Fall and spring terms. Credit three hours. Required of graduate students majoring or minoring in the area of organization behavior and M.I.L.R. candidates; open to others with a major or minor in the Field.

Survey of concepts and studies from the fields of individual and social psychology, selected for their pertinence to the area of organizational behavior. The relationship between research findings and application to organizational problems will be stressed. Consideration of individual differences; attitude formation and its relation to social processes; factors affecting different kinds of learning; motivation and its relationship to productivity; perception and its relationship to evaluation of performance; leadership and the influence process; group formation and its effect on the individual and the organization.



**521. ORGANIZATIONAL BEHAVIOR II**

Fall and spring terms. Credit three hours. Required of graduate students majoring or minoring in the area of organizational behavior and M.I.L.R. candidates. Open to others with a major or minor in the Field.

The course deals primarily with (1) the structure and dynamics of organizations, (2) the administration of the employee relations functions, and (3) cases and problems which help the student to integrate and apply underlying concepts. Designed to provide basic background and understanding of the organization and management of organizations and the problems arising within the organizational context. The basic background is intended to be preliminary to more intensive work in organizational behavior.

**522. THEORIES OF ORGANIZATION**

Fall or spring term. Credit three hours. Prerequisite: 521. Mr. Gordon.

Intended for students interested in more intensive work in theories of organizations and organizational behavior. Writings in the now extensive field of organizational theory will be examined. These may include the following: the intellectual predecessors of the field; Marx, Weber, and Durkheim. Contemporary works of organizational theory may include Homans, Blau, Caplow, Barnard, March and Simon, Etzioni, Crozier, Dahrendorf.

**523. THEORIES AND METHODS OF ORGANIZATIONAL CHANGE**

Spring term. Credit three hours. Prerequisite: 520, 521 and/or consent of the instructor. Department faculty.

An examination of certain change agents, including consultants, union organizers, applied social scientists, and staff and managerial personnel, as they attempt to initiate, structure, and direct organizational change. Attention will be given to the strategies used by these change agents as they relate to selected theories of organizational behavior and organizational change.

**524-525. BEHAVIORAL RESEARCH THEORY, STRATEGY AND METHODS I AND II**

Fall term, 524; spring term, 525. Credit variable. Except by petition, 524 and 525 must be taken in sequence. Prerequisite: permission of the instructor.

Designed to meet the needs of M.S. and Ph.D. candidates majoring in organizational behavior, but other graduate students may enroll.

Units of material to be included are (1) theoretical, conceptual, and ethical questions; (2) survey research and attitude scaling procedures; (3) laboratory research methods; (4) participant observation and interview methods; and (5) the use of documents and qualitative data analysis. The course will provide the student with important philosophical background for doing research and will expose him to a well-balanced, interdisciplinary set of quantitative and qualitative research tools. Readings will be supplemented by projects and laboratory exercises.

**526. MANAGEMENT OF SCIENCE**

Spring term. Credit three hours. Mr. Gordon.

The course treats the management of science on both the micro- and macro-levels. It will examine empirical findings as they bear on national policy with respect to science, and as they bear on environmental settings which inhibit or stimulate accomplishment. Emphasis will be placed on current problems such as freedom and control of science, scientific secrecy, bureaucracy and creativity, financial and political underpinnings of research, and the emerging social system of science.



528 PSYCHOLOGY OF INDUSTRIAL CONFLICT

Fall term. Credit three hours. Prerequisite: permission of the instructor Mr. Rosen.

An application of frustration theory to the analysis of conflict and stress in organizations and society. Comparisons are made between industrial relations, race relations, international relations, and other settings. Readings include behavioral research findings from a variety of studies in industry, and contributions from experimental, social, and clinical psychology.

620. SEMINAR ON PERSONALITY AND ORGINAZATION

Fall or spring term. Credit three hours. Prerequisite: 520 and 521, or permission of the instructor. Mr. Williams.

This seminar attempts to integrate available research and focuses on both personality and organizational variables. Investigations in the field of culture and personality will be examined for their utility in the understanding of organizational functioning. The relationship of personality to economic development will also be examined. Participants will be encouraged to write a term paper on the interrelationship of technology and values.

621. TOPICS ON ORGANIZATIONAL STRUCTURE

Fall term. Credit three hours. Prerequisite: 521 or consent of the instructor. Mr. Meyer.

The seminar will review the recent literature on organizational structure.

622. CROSS-CULTURAL STUDIES OF WORK AND INSTITUTIONAL DEVELOPMENT

Fall term. Credit three hours. Permission of instructor required. Mr. Whyte and Mr. Williams.

A research seminar devoted to the analysis of survey and anthropological field reports from Peruvian villages, industrial plants and schools, and from comparable United States organizations. Each student will select a problem area for analysis and will write a research paper.

623. SEMINAR IN ORGANIZATIONAL THEORY

Fall term. Credit three hours. Prerequisite: 521 and 522 or equivalent and consent of the instructor. Mr. Gordon.

An intensive analysis of the major work of recent theorists of organizational behavior, such as Barnard, March and Simon, Homans, Caplow, Etzioni, and Crozier.

624. LEADERSHIP IN ORGANIZATIONS

Spring term. Credit three hours. Prerequisite: permission of the instructor. Mr. Gruenfeld.

This seminar is designed to examine theories and research findings from the behavioral sciences that are relevant to leadership and the influence process in groups and organizations. Personality, situational factors, intra-group processes, interpersonal perception, as well as motivation to lead and to follow will be discussed. The implications for leadership training, organization development, and action research will be explored.

629. CROSS-CULTURAL STUDIES OF ORGANIZATIONS

Fall or spring term. Credit three hours. Prerequisite: consent of the instructor. Enrollment limited to twenty.

The seminar will deal with cross-cultural similarities and differences in organizational processes, e.g., recruitment, decision making, authority, reward,

and punishment. Organizations in all sectors of society will be considered, i.e., economic, political, educational, health, etc.

#### 699. DIRECTED STUDIES

Fall and spring terms. Credit to be arranged.

For individual research under the direction of a member of the faculty.

#### SOCIOLOGY 503. SOCIOLOGY OF SCIENCE

Fall term. Mr. Gordon.

### INTERNATIONAL AND COMPARATIVE LABOR RELATIONS

#### 530. COMPARATIVE INDUSTRIAL RELATIONS SYSTEMS I

Fall term. Credit three hours. Prerequisite: for non-ILR graduate students, 250 or consent of the instructor. Mr. Windmuller.

An introductory course concerned with the history, structure, institutional arrangements, and philosophy of the labor relations systems of several countries in advanced stages of industrialization. Countries to be examined include Great Britain, France, Germany, Sweden, the Soviet Union, and others.

#### 531. COMPARATIVE INDUSTRIAL RELATIONS SYSTEMS II

Spring term. Credit three hours. Mr. Windmuller.

A comparative review of systems of labor relations of countries in early and intermediate stages of economic development. The course surveys the development of industrial labor forces, the evolution of functions of labor organizations, the role of government in industrial relations and the emergence of different patterns of labor-management relations. Also covers the history of individual labor relations systems in selected countries of Asia, Africa, the Middle East, and the Western Hemisphere.

#### 533. INDUSTRIAL RELATIONS IN LATIN AMERICA

Spring term. Credit three hours. Mr. Morris.

A broad survey of industrial and labor relations in Latin America in their geographic, political, economic, and social settings. A framework for analysis of industrial relations systems in developing societies is presented and applied to the Latin American area. This is followed by discussion of labor codes, organized labor and political parties, management, and labor-management relations. The labor movements and industrial relations systems of five or six of the Latin American republics are then presented as case studies. Comparisons are made with United States experience whenever possible. Finally, the history and present status of hemisphere labor movements are presented with special attention to the role of United States labor in these movements.

#### 536. ECONOMIC CHANGE AND INDUSTRIAL RELATIONS IN ASIA

Fall term. Credit three hours. Mr. Niland.

An examination of the labor movements and systems of industrial relations in Asia, set within a comparative framework that emphasizes the impact of economic development on labor and industrial relationships. Substantial attention will be given to the emergence of industrial labor markets and their institutions, manpower regulation and rationalization, and labor-management relations. The role of government and public intervention in

shaping the systems within which labor and management function is also given attention. Comparisons are drawn, where possible, with relevant aspects of American experience and with that of other countries at advanced stages of development such as Great Britain and Australia. Countries to be examined include India, Japan, the Philippines, and Malaysia.

#### 630. SEMINAR IN INTERNATIONAL AND COMPARATIVE LABOR PROBLEMS

Spring term. Credit three hours. Prerequisite: 530 or 531 or consent of the instructor. Mr. Windmuller.

Students will examine selected problems in labor relations in the light of international and comparative experience and will be expected to prepare, discuss, and defend individual research papers. Seminar topics will vary from year to year in line with student and faculty interests.

#### 699. DIRECTED STUDIES

Fall and spring terms. Credit to be arranged.

For individual research under the direction of a member of the faculty.

### LABOR ECONOMICS AND INCOME SECURITY

#### 540. LABOR ECONOMICS

Fall and spring terms. Credit three hours. Required of graduate students majoring or minoring in labor economics and income security and M.I.L.R. candidates. Prerequisite: Economics 101-102 or equivalent. Enrollment limited to twenty students each term. Mr. Perl.

Economic issues in the employment and compensation of labor. Topics discussed include labor force growth and composition, structure and functioning of labor markets, unemployment, wage theories, wage levels and structures, the economic influence of unions, income distribution, the problem of poverty.

#### 544. SOCIAL SECURITY AND PROTECTIVE LABOR LEGISLATION

Fall term. Credit three hours. Normally required of graduate students majoring or minoring in labor economics and income security and required of M.I.L.R. candidates. Mr. Slavick.

The fundamental aspects of employee protection and income security. Emphasis will be placed upon state and federal minimum wage and hour laws, health and safety legislation, employee benefit programs, and the social insurances. The underlying causes of the legislation will be studied, as well as its history, administrative problems and procedures, and social and economic impact. Efforts of unions, employers, and government in the establishment of labor standards will also be considered.

#### 546. ECONOMICS OF MANPOWER

Fall term. Credit three hours. Prerequisite: 540 or equivalent. Mr. Aronson.

Analysis and discussion of the factors determining the nature and scope of the need for manpower policies and planning in industrial economies. Topics covered include: labor force development and behavior; occupational choice and occupational mobility; human capital formation; determinants of occupational employment; manpower policies and their relation to economic policies in the United States and abroad. Methodologies of projecting labor force and manpower requirements and related statistics are systematically

covered and special topics developed in accordance with student interests and preference.

#### 549. ECONOMICS OF POVERTY

Fall term. Credit three hours. Mr. Perl.

The course is focused on the causes of and remedies for income inequality in industrialized economies. It will concentrate first on alternative theories of inequality in the functional distribution of income—monopolies, rents and quasi rents, ability, and the acquisition of human capital. The course will then turn to an examination of the relative efficiency of alternative means for remedying these inequalities—countervailing power, taxation, redistribution of social service.

#### [645. COMPARATIVE ECONOMIC SYSTEMS: SOVIET RUSSIA]

Fall and spring terms. Credit three hours. Prerequisite: 445. Mr. Clark.

#### 647. WORKSHOP IN LABOR ECONOMICS

Fall and spring terms. Credit three hours. Mr. Galenson.

This course is designed for Ph.D. students at the dissertation-writing stage. It will be concerned primarily with the formulation, design, and execution of dissertations. Preliminary plans and portions of completed work will be presented to the workshop for discussion.

#### 648, 649. SEMINAR IN LABOR ECONOMICS (Same as Economics 641, 642.)

Fall term, 648; spring term, 649. Credit three hours each term. Mr. Galenson and Mr. Hildebrand, jointly.

Reading and discussion of selected topics in current labor economics in the fields of theory, institutions and policy.

#### 699. DIRECTED STUDIES

Fall and spring terms. Credit to be arranged.

For individual research under the direction of a member of the faculty.

## INSTITUTION MANAGEMENT

Faculty: Mary K. Bloetjes, Doris Breunig, Kathryn E. Visneyi.

Field Representative: Mary K. Bloetjes, 170-B Martha Van Rensselaer Hall.

#### MAJOR SUBJECT

Dietetics (for M.S.)

#### MINOR SUBJECT

Dietetics (for M.S. and Ph.D.)

**FIELD AIMS AND OPERATIONS.** Graduate study in the Field of Institution Management emphasizes administrative aspects of dietary department operations in hospitals, schools, and similar institutions.

The subject matter deals with the use of dietary department resources in effecting the principles of food science and nutrition as applied to the feeding of individuals and groups.

The graduate student has opportunity to gain an understanding of research methods and the role which research plays in the advancement of dietetics as a field of study.

Persons with advanced degrees in dietetics are in demand in many professional areas including dietary department administration, school lunch

program direction, and consultation in public health departments. Other professional opportunities are in college teaching and the administration of academic departments in universities.

Students usually combine a major in the Field with a minor in nutrition, foods, personnel administration, or education.

**ADMISSION REQUIREMENTS.** Applicants are expected to have recent study in chemistry, biochemistry, nutrition, and education with an above-average academic record. An undergraduate major in dietetics or in food and nutrition is advantageous. Applicants should have had appropriate postbaccalaureate experience in the field. An outstanding undergraduate record with summer work experience may be considered as the equivalent.

**RESEARCH AND STUDY OPPORTUNITIES.** Excellent field contacts are maintained with dietary departments in various hospitals, schools and similar institutions.

Thesis research may be undertaken in the following areas: management of dietary department resources, process analysis and control of diet item production, and curriculum development.

Theses may be part of the on-going, established research programs of the Field.

**FINANCIAL AID.** One graduate fellowship and two assistantships are currently available to graduate students majoring in dietetics. U.S.P.H.S. traineeships are available to applicants who have completed dietetic internships approved by the American Dietetic Association and who are citizens of the United States.

## Courses

### 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit to be arranged. For graduate students recommended by their chairmen and approved by the head of the department and the instructor in charge for independent, advanced work. Department faculty.

### 510. SEMINAR IN DIETARY DEPARTMENT ADMINISTRATION

Spring term. Credit one hour. Required of all graduate students in the Department.

### 519. THEORY OF QUANTITY DIET ITEM PRODUCTION AND SERVICE

Fall term. Credit three hours. Graduate section of I.M. 419. Instructor's permission required. Mrs. Bloetjes.

### 520. ADVANCED FOOD SELECTION AND PURCHASE

Fall term. Credit three hours. Instructor's permission required. Lecture and discussion. Miss Breunig.

A discussion of sources, standards of quality, grades, care, and storage of various food commodities. Emphasis on the development of purchasing policies and the organization of purchasing procedures.

### 525. ADVANCED ORGANIZATION AND MANAGEMENT

Spring term. Credit two hours. Instructor's permission required. Miss Breunig.

Analysis and interpretation of major administrative problems in the opera-

tion of a dietary department. Scientific applications of business management and of budgetary and production control principles are studied in relation to quantity meal production and service.

#### 527. DIETARY DEPARTMENT LAYOUT AND EQUIPMENT

Spring term. Credit two hours. Instructor's permission required.

Focused on the principles of layout planning and equipment selection for dietary departments in hospitals, school, and other facilities. Survey of current trends and projected developments affecting planning for the future. A one-day field trip to typical facilities is planned. Cost, \$5.

#### 529. SANITARY ASPECTS OF DIET ITEM PREPARATION IN QUANTITY

Spring term. Credit two hours. Instructor's permission is required. Miss Breunig.

#### 540. DATA PROCESSING APPLIED TO DIETARY DEPARTMENT ADMINISTRATION

Spring term. Credit two hours. Prerequisite: I.M. 519 and I.M. 525 or equivalents. Mrs. Bloetjes.

Includes the development of data programs for the procurement and issuing of food commodities, processing of ingredients, and the scheduling of departmental resources as related to automatic data processing.

#### 541. ADVANCED DIETARY COST CONTROL AND ACCOUNTING

Spring term. Credit three hours. Instructor's signature required for pre-registration. Miss Schwam.

Focus is on the identification of hospital dietetic department costs. Interpretation of financial data will be emphasized as a management responsibility. Current hospital and medical economics will be discussed with consideration given to the financial reimbursement and controls of government and non-governmental agencies.

#### 599. MASTER'S THESIS AND RESEARCH

Fall and spring terms. For graduate students with training and experience satisfactory to the instructor. Mrs. Bloetjes, Miss Breunig, and Mrs. Visneyi.

## INTERNATIONAL AGRICULTURAL DEVELOPMENT

Faculty: Douglas E. Ashford, Solon L. Barraclough, Fredrick T. Bent, Carl W. Boothroyd, Paul A. Buck, Marlin G. Cline, Royal Colle, Howard E. Conklin, Robert H. Crawford, Loy V. Crowder, Tom E. Davis, Matthew Drosdoff, Reeshon Feuer, Donald K. Freebairn, Frank H. Golay, Robert F. Holland, William K. Jordan, William C. Kelly, George C. Kent, Richard P. Korf, Frank V. Kosikowski, Douglas J. Lathwell, J. Paul Leagans, Gilbert Levine, John K. Loosli, Harry A. MacDonald, John G. Matthyse, Robert E. McDowell, John W. Mellor, Philip A. Minges, Henry M. Munger, Robert B. Musgrave, Thomas T. Poleman, Jr., Robert A. Polson, Kenneth L. Robinson, Milton L. Scott, Daniel G. Sisler, Robert M. Smock, Earl L. Stone, Jr., Robert D. Sweet, H. David Thurston, Frederick K. T. Tom, George W. Trimberger, Kenneth L. Turk, Donald H. Wallace, Frank W. Young.

Field Representative: Kenneth L. Turk, 102 Roberts Hall.

## MINOR SUBJECT

### International Agricultural Development

This Field is intended primarily for students who are preparing for service in foreign countries. The student will seek depth of knowledge by majoring in a biological, physical, or social science. The minor subject draws from several disciplines with the objective of assisting the student in understanding the special conditions and problems of newly developing economies. While this minor is planned specifically for students majoring in one of the graduate fields of agriculture, other qualified students are welcome. It is intended for students from other countries as well as for those from the United States. Students will register for seminars, courses, and special problems offered by the several departments and colleges.

A student minoring in this Field is encouraged to gain speaking proficiency in a language likely to prove most useful in this area of service in addition to meeting the language requirements in his major Field.

A student may not minor in this Field if he is minoring in Asian Studies or Latin American Studies, and he may not select a professor for this minor who also serves on the Graduate Faculty in the student's major Field.

## Courses

### INTERNATIONAL AGRICULTURE

#### 600. SEMINAR: INTERNATIONAL AGRICULTURAL DEVELOPMENT

Fall and spring terms. No credit. Third and fourth Wednesdays, 4:30-5:30. Professor Turk and staff.

Primarily for graduate students interested in an integrated view of problems related to international agricultural development. Undergraduates with a specialization in International Agriculture are encouraged to attend without registering. The seminar will focus on developing an understanding of the nature and interrelatedness to agricultural development of the social sciences, plant and animal sciences, foods and nutrition, and natural resources.

#### 601. SEMINAR ON AGRICULTURAL DEVELOPMENT IN THE PHILIPPINES

Spring term. Credit two hours. Professors Golay and Levine.

Major aspects of Philippine agricultural development will be considered from economic, social, and technological points of view.

#### ECONOMICS OF AGRICULTURAL DEVELOPMENT (Agricultural Economics 464)

#### ECONOMIC ASPECTS OF THE WORLD'S FOOD (Agricultural Economics 560)

#### SEMINAR IN AGRICULTURAL POLICY (Agricultural Economics 651)

#### SEMINAR ON THE AGRICULTURAL DEVELOPMENT OF SOUTH ASIA (Agricultural Economics 664)

#### SEMINAR ON LATIN AMERICAN AGRICULTURAL POLICY (Agricultural Economics 665)

SEMINAR ON THE ECONOMICS OF TROPICAL AGRICULTURE  
(Agricultural Economics 667)

SEMINAR IN THE ECONOMICS OF AGRICULTURAL DEVELOPMENT  
(Agricultural Economics 668)

LOW-COST ROADS (Agricultural Engineering 491)

GEOGRAPHY AND APPRAISAL OF SOILS OF THE TROPICS (Agronomy  
401)

TROPICAL AGRICULTURE (Agronomy 422)

SPECIAL STUDIES IN SOILS OF THE TROPICS (Agronomy 481)

LIVESTOCK PRODUCTION IN THE TROPICS (Animal Science 400)

SPECIAL STUDIES IN LIVESTOCK OF THE TROPICS (Animal Science  
401)

INTERNATIONAL COMMUNICATION (Communication Arts 501)

COMMUNICATION IN DEVELOPING NATIONS (Communication Arts  
524)

INTERNATIONAL NATURE CONSERVANCY (Conservation 511)

RURAL SOCIETY (Development Sociology 412)

COMPARATIVE RURAL SOCIETIES (Development Sociology 420)

OCCUPATIONAL STRUCTURE IN INDUSTRIAL AND DEVELOPING  
COUNTRIES (Development Sociology 424)

CROSS-CULTURAL RESEARCH METHODS (Development Sociology 516)

APPLICATIONS OF SOCIOLOGY TO DEVELOPMENT PROGRAMS  
(Development Sociology 528)

SEMINAR: CONTEMPORARY SOCIAL THEORY I (Development  
Sociology 630)

SEMINAR: SOCIAL CHANGE AND DEVELOPMENT (Development  
Sociology 636)

DESIGNING PROGRAMS OF DEVELOPMENTAL CHANGE (Education  
524)

COMMUNICATING TECHNOLOGY (Education 525)

SEMINAR: COMPARATIVE EXTENSION EDUCATION SYSTEMS  
(Education 626)

SEMINAR: IMPLEMENTING EXTENSION AND COMMUNITY  
DEVELOPMENT PROGRAMS IN DEVELOPING COUNTRIES  
(Education 627)

ADVANCED PARASITOLOGY (MEDICAL ENTOMOLOGY) (Entomology  
552)



INTERNATIONAL FOOD DEVELOPMENT (Food Science 403)

INTERNATIONAL NUTRITION PROBLEMS, POLICIES, AND PROGRAMS (School of Nutrition)

INTERNATIONAL CROP BREEDING AND IMPROVEMENT (Plant Breeding 506)

PLANT DISEASES IN AGRICULTURAL DEVELOPMENT (Plant Pathology 655)

SPECIAL TOPICS IN PLANT SCIENCE EXTENSION (Vegetable Crops 429)

## LATIN AMERICAN STUDIES

Faculty: Frederick B. Agard, Solon Barraclough, Jerome S. Bernstein, Dalai Brenes, Loy V. Crowder, Tom E. Davis, Martin Dominguez, Matthew Drosdoff, Charles L. Eastlack, Donald K. Freebairn, Rose K. Goldsen, Thomas Gregor, Anthony G. Lozano, Thomas F. Lynch, Robert E. McDowell, James O. Morris, John V. Murra, Thomas Poleman, Bernard Rosen, Donald F. Solá, J. Mayone Stycos, H. David Thurston, William F. Whyte, Lawrence K. Williams, Frank W. Young.

Field Representative: Donald K. Freebairn, 205 Rand Hall.

### MINOR SUBJECT

Latin American Studies

The requirements for the minor in Latin American Studies include (1) a knowledge of Latin American history, culture, political organization, and problems of economic development, and (2) proficiency in reading and speaking either Spanish or Portuguese. Courses are offered in elementary, intermediate, and advanced Spanish; in elementary and advanced Portuguese; and in the Cuzco dialect of Quechua. Consult the *Announcement of the College of Arts and Sciences* for full listings and course descriptions. Normally, a student is expected to conduct field research in Latin America as the basis for his doctoral thesis.

## Courses

SEMINAR ON LATIN AMERICAN AGRICULTURAL POLICY  
(Agricultural Economics 665)

SEMINAR ON THE ECONOMICS OF TROPICAL AGRICULTURE  
(Agricultural Economics 667)

SEMINAR IN THE ECONOMICS OF AGRICULTURAL DEVELOPMENT  
(Agricultural Economics 668)

GEOGRAPHY AND APPRAISAL OF SOILS OF THE TROPICS  
(Agronomy 401)

SPECIAL STUDIES IN SOILS OF THE TROPICS (Agronomy 481)

LIVESTOCK PRODUCTION IN THE TROPICS (Animal Science 400)

SPECIAL STUDIES IN LIVESTOCK OF THE TROPICS (Animal Science 401)

ETHNOHISTORY (Anthropology 418)

ETHNOLOGY OF SOUTH AMERICA (Anthropology 432)

ETHNOLOGY OF THE ANDEAN REGION (Anthropology 433)

COMPARATIVE RURAL SOCIETIES (Development Sociology 420)

CROSS-CULTURAL RESEARCH METHODS (Development Sociology 516)

ECONOMIC HISTORY OF LATIN AMERICA (Economics 325)

ECONOMIC PROBLEMS OF LATIN AMERICA (Economics 565)

GOVERNMENT AND POLITICS OF LATIN AMERICA (Government 340)

SEMINAR IN LATIN AMERICAN POLITICS (Government 540)

LATIN AMERICAN HISTORY IN THE COLONIAL PERIOD (History 319)

LATIN AMERICAN HISTORY SINCE INDEPENDENCE (History 320)

BRAZIL SINCE INDEPENDENCE (History 488)

SEMINAR IN LATIN AMERICAN HISTORY (History 687-688)

SOCIAL ASPECTS OF HOUSING IN DEVELOPING COUNTRIES  
(Housing and Design 545-546)

SEMINAR ON URBAN MARGINAL AREAS IN DEVELOPING  
COUNTRIES (Housing and Design 547)

CROSS-CULTURAL STUDIES OF WORK AND INSTITUTIONAL  
DEVELOPMENT (Industrial and Labor Relations 622)

SOCIOLINGUISTICS (Linguistics 515-516)

POPULATION PROBLEMS (Sociology 230)

COMPARATIVE SOCIAL STRUCTURE (Sociology 350)

ECONOMIC DEVELOPMENT AND SOCIAL EVOLUTION (Sociology 362)

INTERNATIONAL URBANIZATION (Sociology 433)

SOCIOLOGY OF MEDICINE (Sociology 447)

INTRODUCTION TO DEMOGRAPHY (Sociology 530)

SEMINAR: CONTEMPORARY RESEARCH IN DEMOGRAPHY  
(Sociology 632)

SEMINAR: SOCIAL PSYCHOLOGY OF MODERNIZATION (Sociology 685)

THE NOVEL AND THE MEXICAN REVOLUTION (Spanish 329)

MODERN SPANISH AMERICAN POETRY (Spanish 392)

GRADUATE SEMINAR IN SPANISH AMERICAN LITERATURE  
(Spanish 590)

SEMINAR IN IBERO-ROMANCE LINGUISTICS (Spanish 600)

## LAW

Faculty: Robert A. Anthony, John J. Barcelo, John S. Brown, W. David Curtiss, W. Tucker Dean, W. Ray Forrester, Harrop A. Freeman, Kurt L. Hanslowe, Harry G. Henn, William E. Hogan, Milton R. Konvitz, John W. MacDonald, Ian R. Macneil, Walter E. Oberer, Robert S. Pasley, Norman Penney, David L. Ratner, Ernest F. Roberts, Jr., Faust F. Rossi, Rudolf B. Schlesinger, Robert S. Summers, Gray Thoron, Ernest N. Warren.

Field Representative: Robert A. Anthony, 305 Myron Taylor Hall.

## MAJOR SUBJECT

Law

## MINOR SUBJECT

Law<sup>a</sup>

The Master of Laws (LL.M.) and the Doctor of the Science of Law (J.S.D.) degrees are conferred. The former is intended for the student who desires to increase his knowledge of law by work in a specialized field. The latter is intended for the student who desires to become a legal scholar and to pursue original investigations into the function, administration, history, and progress of law.

The minimum residence required is two full semesters, but completion of the LL.M. program will usually require one summer in addition, and the J.S.D. program normally requires three to four semesters. Longer periods may be required by the nature of the candidate's program, which is arranged on an individual basis. A candidate for either degree will ordinarily be expected to concentrate on one legal field and to do a substantial amount of work in at least one other field.

Students who meet the requirements for admission to the Graduate School's Division of Law but who do not wish to become candidates for a degree may, at the discretion of the faculty, be admitted as nondegree candidates.

**ADMISSION REQUIREMENTS.** Candidates for the LL.M. or J.S.D. degree are accepted only when, in the judgment of the Law School faculty, the candidate shows exceptional qualifications, the Cornell program offers sufficient advanced courses in the special field of the applicant's interest, and the Law School faculty is in a position to supervise properly the proposed course of study. An applicant for admission for an LL.M. or J.S.D. degree is expected (1) to hold a baccalaureate degree from a college or university of recognized standing; (2) to hold a degree of Bachelor of Laws or a degree of equivalent rank from an approved law school; (3) to have had adequate preparation to enter upon study in the field chosen; and (4) to show promise of an ability, evidenced by his scholastic record or otherwise, to pursue satisfactorily advanced study and research and attain a high level of professional achievement. An applicant for admission for a J.S.D. degree must, in addition, have had professional practice or experience in teaching or advanced research since obtaining his degree of Bachelor of Laws.

9. For those majoring in other fields (especially in the Social Sciences) with the approval of the Field of Law.

An application for admission should state in as much detail as possible the objective for which the applicant wishes to do advanced graduate work and the particular fields of study which he wishes to pursue. It should also contain a brief personal and academic history of the applicant. Other general requirements for admission to the Graduate School should be met.

Applicants from countries other than the United States can be considered for candidacy for the LL.M. or J.S.D. degree only if they have completed their basic studies in law in a university abroad with grades of high distinction and have completed all the studies necessary for admission or licensing for the practice of law in their own country, and if their presence at Cornell Law School would, because of special circumstances, be of particular interest to the faculty and students. These requirements apply whether or not the applicant is seeking financial aid. Any applicant for whom English is not a native language must give satisfactory evidence of ability to carry on his studies in English successfully.

No special examinations or tests are required for admission. For further details, see the *Announcement of the Law School*.

**LANGUAGE REQUIREMENTS.** The Special Committee of a candidate may require demonstration of a reading knowledge of one or more foreign languages if the Committee deems it desirable, but there is no fixed language requirement.

**EXAMINATION AND THESIS REQUIREMENTS.** Examinations are administered in the courses taken for credit by the candidate. The degree candidate must also pass an oral examination and such other examinations as may be required by his supervisory Special Committee.

A thesis (or its reasonable equivalent, e.g., in the form of a report on field research) is required of LL.M. candidates. J.S.D. candidates are required to submit a scholarly dissertation evidencing original research and independent thinking, worthy of publication as a contribution to legal literature.

**RESEARCH AND STUDY OPPORTUNITIES.** While a candidate may select any topic of law which interests him, special opportunities exist at Cornell in city and regional planning, comparative law, commercial law, copyright and trademark law, corporation law, government contracts, industrial and labor relations, international legal studies, legislation and property law. There are faculty specialists, both in the Law School and in other branches of the University, in all these subjects, as well as in the other subjects commonly offered at American schools.

While no minor is required for those majoring in the Field of Law, the following subjects serve to illustrate appropriate minors: city and social planning, economics, American government, political theory, comparative government, international law and relations, industrial and labor relations, international agricultural development.

## Courses

The courses offered in the Law School are all open to J.D., LL.M., and J.S.D. candidates. Reference should be made to the *Announcement of the Law School* for detailed course descriptions. See also the description on p. 36 of the International Legal Studies Program.

## LINGUISTICS

Faculty: Frederick B. Agard, Leroy J. Benoit, Nicholas C. Bodman, J. M. Cowan, Charles L. Eastlack, John M. Echols, Charles E. Elliott, Gordon H. Fairbanks, Frederick A. Foos, James W. Gair, Joseph E. Grimes, Robert A. Hall, Jr., Baxter Hathaway, Charles F. Hockett, Robert B. Jones, Jr., Robert E. Kaske, Gerald B. Kelley, Herbert L. Kufner, Richard L. Leed, Pardee Lowe, Jr., Anthony G. Lozano, John McCoy, Gordon M. Messing, James S. Noblitt, Robert M. Quinn, Mario D. Saltarelli, Donald F. Solá, Donald S. Stark, Frans van Coetsem, John U. Wolff.

Field Representative: Frederick B. Agard, 227 Morrill Hall.

## MAJOR AND MINOR SUBJECT

## General Linguistics

**ADMISSION REQUIREMENTS.** There are no special requirements for admission to study in the Field of Linguistics other than the general requirements for admission to the Graduate School.

**LANGUAGE REQUIREMENTS.** The candidate for the M.A. degree is required to demonstrate a reading knowledge of one language other than his native language. The candidate for a Ph.D. degree is required to demonstrate a reading knowledge of two languages other than his native language, of which at least one must be chosen from English, French, German or Russian. Any standardized test must be passed at the "higher proficiency" level.

**EXAMINATIONS.** For the M.A., there is only the Final Examination. For the Ph.D., there are three examinations: (1) the Qualifying Examination, taken at the end of the second semester of residence; students entering with an M.A. in Linguistics from another institution must take this examination as soon as possible and not later than the end of their first semester; (2) the Admission to Candidacy Examination, to be taken no earlier than one year and no later than two years after the Qualifying Examination; and (3) the Final Examination on the candidate's thesis.

It is possible for a well-qualified student with a good background in Linguistics to complete an M.A. degree in one year and a Ph.D. degree in three years after the B.A. Students entering Cornell without such a background in linguistics should normally expect to take two years for the M.A. and four years for the Ph.D. It is not required that an M.A. degree be earned on the way to a Ph.D. degree.

Since teaching experience is a required preparation for the Ph.D. degree, candidates will teach under senior staff supervision.

**SPECIALIZATION WITHIN A LINGUISTICS PROGRAM.** The broad scope of offerings in both pure and applied Linguistics at Cornell can be seen from the following list of major and minor linguistic subjects available in various of the Graduate Fields:

MAJOR AND MINOR SUBJECT	FIELD
East Asian Linguistics <sup>10</sup>	Asian Studies
English Linguistics <sup>10</sup>	English Language and Literature
French Linguistics	Romance Studies
General Linguistics	Linguistics
Germanic Linguistics	Germanic Studies
Indo-European Linguistics <sup>10</sup>	The Classics
Italian Linguistics	Romance Studies
Romance Linguistics	Romance Studies
Slavic Linguistics	Slavic Studies
South Asian Linguistics	Asian Studies
Southeast Asian Linguistics	Asian Studies
Spanish Linguistics	Romance Studies

The specializations of the various faculty members follow.

- Frederick B. Agard: Romance linguistics, Portuguese, Rumanian.  
 Leroy J. Benoit: French linguistics.  
 Nicholas C. Bodman: Chinese and Sino-Tibetan linguistics.  
 J M. Cowan: Language pedagogy, acoustical phonetics.  
 Charles L. Eastlack: Portuguese linguistics, Brazilian indigenous languages.  
 John M. Echols: Malayo-Polynesian linguistics.  
 Charles E. Elliott: English linguistics.  
 Gordon H. Fairbanks: Indo-European, Indo-Aryan, Armenian linguistics.  
 Frederick A. Foos: Slavic linguistics.  
 James W. Gair: General linguistics, South-Asian linguistics, Sinhalese.  
 Joseph E. Grimes: General linguistics, indigenous languages of the Americas.  
 Robert A. Hall, Jr.: Comparative Romance linguistics, history of Italian language and literature, pidgin and creole languages.  
 Baxter Hathaway: English linguistics.  
 Charles F. Hockett: Anthropological linguistics.  
 Robert B. Jones, Jr.: Descriptive and comparative linguistics of Southeast Asia.  
 Robert E. Kaske: English linguistics.  
 Gerald B. Kelley: Dravidian, computational, general linguistics.  
 Herbert L. Kufner: Germanic linguistics.  
 Richard L. Leed: Slavic linguistics, Russian.  
 Pardee Lowe, Jr.: Germanic linguistics.  
 Anthony G. Lozano: Spanish linguistics.  
 John McCoy: Japanese and Chinese linguistics, Chinese dialects.  
 Gordon M. Messing: Classical linguistics.  
 James S. Noblitt: Romance linguistics, programmed learning.  
 Robert M. Quinn: Southeast Asian linguistics.  
 Mario D. Saltarelli: General linguistics, transformational grammar, Spanish and Italian linguistics.  
 Donald F. Solá: Spanish linguistics, Quechua.  
 Donald S. Stark: Spanish linguistics.  
 Frans van Coetsem: Germanic linguistics.  
 John U. Wolff: Indonesian and Philippine linguistics.

For further information on these, see the Classics, English Language and Literature, Germanic Studies, Romance Studies, and Slavic Studies in the *Announcement of the Graduate School: Humanities*; also under Asian Studies in this *Announcement*.

10. Minor subject only.

## Courses

### LINGUISTICS

#### 207. PRACTICAL PHONETICS

Fall term. Credit three hours. Mr. Agard.

#### 301-302. THE STRUCTURE OF ENGLISH

Throughout the year. Credit four hours a term. Mr. Elliott.

#### 303. PHONOLOGY

Fall term. Credit four hours. Mr. Agard.

#### 304. MORPHOLOGY

Spring term. Credit four hours. Mr. Agard.

#### 305. LANGUAGE STRUCTURES

Fall term. Credit four hours. Mr. Hockett.

#### 306. SYNTAX

Spring term. Credit four hours. Mr. Saltarelli.

#### 331. INDIA AS A LINGUISTIC AREA

Fall term in alternate years. Credit four hours. Prerequisite: Linguistics 202. Mr. Fairbanks, Mr. Gair, or Mr. Kelley.

#### 403-404. ANALYTIC TECHNIQUES

Throughout the year. Credit four hours a term. Prerequisite: Linguistics 201-202. Mr. Hockett.

A practical training course in the techniques of observation and analysis of descriptive linguistics.

#### 406. DIALECTOLOGY

Spring term. Credit four hours. Mr. Hall.

A general survey of the study of dialectal variations in language and the various methodological problems it raises in European and non-European languages.

#### 413-414. LINGUISTIC DATA PROCESSING

Throughout the year. Credit four hours a term. Prerequisite: Linguistics 201 and consent of the instructor. Mr. Kelley.

A brief survey of general computer design and techniques and elementary training in SNOBOL stressing character manipulation. Attention will be given to the computability of linguistic problems, and students will be expected to work up solutions to problems from their own data. This course is intended to provide emphasis on aspects of programming and computability of problems of interest to linguists which are not stressed in general, numerically oriented courses.

#### 432. INDO-ARYAN STRUCTURES

Spring term in alternate years. Credit four hours. Prerequisite: Linguistics 201. Mr. Fairbanks, Mr. Gair, or Mr. Kelley.

A synchronic examination of the phonological and grammatical structures of major Indo-Aryan languages. Typological studies in the languages of the family.

## 436. DRAVIDIAN STRUCTURES

Spring term in alternate years. Credit four hours. Prerequisite: Linguistics 201. Mr. Kelley.

A synchronic examination of the phonological and grammatical structures of the major languages of the family. Typological studies in Dravidian languages.

## 441-442. HISTORY OF THE ROMANCE LANGUAGES

Throughout the year in alternate years. Credit four hours a term. Mr. Hall.

The history of the Romance languages as a whole from Latin times to the present and their interrelationships. A survey of the accomplishments and approaches of recent work in Romance linguistics.

## 443-444. COMPARATIVE ROMANCE LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Mr. Hall.

The family of Romance languages; the application of the comparative method and the reconstruction of Proto-Romance speech. The relation between Proto-Romance and Old and Classical Latin.

## 445. PROBLEMS AND METHODS IN ROMANCE LINGUISTICS

Fall term every third year. Credit four hours. Mr. Hall.

Examination of selected samples of various methodologies in Romance linguistics, with reports and discussion.

## 446. ROMANCE DIALECTOLOGY

Spring term every third year. Credit four hours. Mr. Hall.

Examination of various types of dialectological description; study of overall relation among Romance dialects.

## 449. AREAL TOPICS IN ROMANCE LINGUISTICS

Fall term every third year. Credit four hours. Course may be repeated. Mr. Hall.

Reading of texts and study of relationships of each area (Dalmatian, Rumanian, Provençal, Sardinian, Catalan).

## 502. COMPARATIVE METHODOLOGY

Spring term in alternate years. Credit four hours. Prerequisite: Linguistics 201-202. Mr. Fairbanks.

A study of the methods and techniques in comparative linguistics; application of these methods to various language families depending on the student's background.

## 504. HISTORY OF LINGUISTICS

Spring term. Credit four hours. Prerequisite: consent of the instructor. Mr. Hall.

## 505. LITERATURE, LANGUAGE, AND CULTURE

Fall term. Credit four hours. Mr. Hall.

A survey of the relation of literature to its linguistic medium and cultural matrix.

## 506. PIDGIN AND CREOLE LANGUAGES

Spring term. Credit four hours. Mr. Hall.

A survey of the field of pidginized and creolized languages, with discussion of methodological problems, historical relationships, and reading of selected texts.



507-508. FIELD METHODS AND LINGUISTIC TYPOLOGY

Throughout the year. Credit four hours a term. Prerequisite: Linguistics 404. Mr. Hockett.

511-512. ACOUSTICAL PHONETICS

Throughout the year. Credit four hours a term. Prerequisite: consent of the instructor. Mr. Cowan.

A rapid survey of the techniques of experimental articulatory phonetics; the speech mechanism as a sound generator; sound spectrography; psychophysiology of hearing; application of acoustical analysis to the study of speech sounds. Requires no mathematical training beyond arithmetical computation.

513-514. TRANSFORMATIONAL ANALYSIS

Throughout the year. Credit four hours a term. Mr. Saltarelli.

An introduction to the theory, literature, and practice.

515-516. SOCIOLINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Prerequisite: consent of the instructor.

521-522. COMPARATIVE INDO-EUROPEAN LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Prerequisite: consent of the instructor. Mr. Fairbanks.

A comparative study of the phonology and morphology of the Indo-European languages and of their interrelationships.

530. ELEMENTARY PALI

Either term as needed. Credit three hours. Mr. Fairbanks.

531-532. ELEMENTARY SANSKRIT

Throughout the year in alternate years. Credit three hours a term. Mr. Fairbanks.

534. COMPARATIVE INDO-ARYAN

Spring term in alternate years. Credit four hours. Prerequisite: Linguistics 202 and 102 or equivalent of an Indo-Aryan language. Mr. Fairbanks.

Comparative reconstruction of Proto-Indo-Aryan phonology and grammar.

536. COMPARATIVE DRAVIDIAN

Spring term in alternate years. Credit four hours. Prerequisite: Linguistics 202 and 102 or equivalent of a Dravidian language. Mr. Kelley.

Comparative reconstruction of Proto-Dravidian phonology and grammar.

537-538. OLD JAVANESE

Throughout the year. Credit four hours a term. Mr. Echols.

561-562. COMPARATIVE SLAVIC LINGUISTICS

Throughout the year in alternate years. Credit four hours a term. Prerequisite: consent of the instructor. Mr. Foos.

571-572. SEMINAR IN SOUTHEAST ASIAN LINGUISTICS

Throughout the year. Credit four hours a term. Prerequisite: Linguistics 201-202 and consent of the instructor. Mr. Jones.

Descriptive and comparative studies of mainland Southeast Asian languages are dealt with in alternate terms. Topics may be selected in accordance with the interests of the students.

#### 573-574. MALAYO-POLYNESIAN LINGUISTICS

Throughout the year. Credit four hours a term. Prerequisite: Linguistics 201-202 and consent of the instructor. Mr. Wolff.

#### 581-582. SINO-TIBETAN LINGUISTICS

Throughout the year. Credit four hours a term. Prerequisites: Linguistics 201-202 or Chinese 402-403 and consent of the instructor. Mr. Bodman.

Descriptive and comparative studies of Chinese dialects and Tibeto-Burman languages.

#### 583. CONTRASTIVE VIETNAMESE AND CHINESE GRAMMAR

Either term. Credit three hours. Prerequisite: consent of the instructor. Mr. Quinn.

#### 600. SEMINAR

Each term. Credit to be arranged. Admission by permission of the instructor.

Subject to the needs of students and to the limitations of staff time, advanced seminars are set up in a wide variety of topics, which, in the past, have included such as the following: contemporary grammatical theory, applied linguistics in language teaching, applied linguistics in literary training and orthography formation, English grammar, German dialects, Romance-based Creoles.

#### 615-616. DIRECTED RESEARCH

### LINGUISTICS COURSES WITH OTHER DESIGNATIONS

#### CHINESE 402. HISTORY OF THE CHINESE LANGUAGE

Either term. Credit four hours. Prerequisite: consent of the instructor. Mr. Bodman.

#### CHINESE 403. LINGUISTIC STRUCTURE OF CHINESE

Either term. Credit four hours. Prerequisite: consent of the instructor. Mr. Bodman.

#### CLASSICS 421-422. HISTORICAL GRAMMAR OF GREEK AND LATIN

Throughout the year. Credit four hours a term. Mr. Messing.

Fall term: phonology. Spring term: morphology and syntax. The linguistic analysis of Greek and Latin sounds and forms and their historical development. The course will thus offer the student an insight into the methods of comparative linguistics as applied to Greek and Latin.

#### ENGLISH 383. THE ENGLISH LANGUAGE

Fall term. Credit four hours.

A historical and topical analysis of the development of English, from its beginnings to the present.

#### ENGLISH 501. READINGS IN OLD ENGLISH

Fall term. Credit four hours.

Elements of Old English grammar and readings in the shorter literary texts.

ENGLISH 503. MIDDLE ENGLISH

Fall term. Credit four hours. Mr. Kaske.

Readings and critical analysis of major works, excluding Chaucer and the drama.

ENGLISH 510. GRAMMATICAL ANALYSIS

Fall term. Credit four hours. Mr. Hathaway.

Study of the structures of English revealed in the transformation of the basic components of predications.

FRENCH 401-402. HISTORY OF THE FRENCH LANGUAGE

Throughout the year. Credit four hours a term. Prerequisite: qualification in French and Linguistics 201. Mr. Benoit.

Fall term: detailed study of the structural development of French from the origins to the Old French period. Spring term: selected readings in Old French texts, examination of structural changes from the Old French period to the present.

FRENCH 403. LINGUISTIC STRUCTURE OF FRENCH

Fall term. Credit four hours. Prerequisite: qualification in French and Linguistics 201. Mr. Noblitt.

A descriptive analysis of present-day French, with emphasis on its phonetics, phonemics, morphology, and syntax. Required of students seeking certification by New York State.

FRENCH 554. GALLO-ROMANCE DIALECTOLOGY

Spring term in alternate years. Credit four hours. Prerequisite: Linguistics 431-432 or 433-434 or consent of the instructor. Mr. Benoit.

FRENCH 555. HISTORICAL PHONOLOGY OF FRENCH

Fall term. Credit four hours. Prerequisite: Linguistics 201 or consent of the instructor. Mr. Benoit.

The detailed study of sound changes from Latin to French, with attention to intermediate stages.

FRENCH 558. LINGUISTIC STRUCTURES OF OLD AND MIDDLE FRENCH

Spring term. Credit four hours. Prerequisite: French 403 or consent of the instructor. Mr. Noblitt.

An attempt at synchronic linguistic analysis of the French of approximately A.D. 1100 and 1600.

FRENCH 600. SEMINAR IN FRENCH LINGUISTICS

Offered in accordance with student needs. Credit four hours a term. Mr. Benoit, Mr. Hall, Mr. Noblitt.

GERMAN 401-402. HISTORY OF THE GERMAN LANGUAGE

Throughout the year. Given in alternate years. Credit four hours a term. Prerequisite: German 204 and Linguistics 201 or consent of the instructor. Fall term: Mr. Kufner. Spring term: Mr. Lowe.

GERMAN 403. LINGUISTIC STRUCTURE OF GERMAN

Fall term. Credit four hours. Prerequisite: German 204 and Linguistics 201 or consent of the instructor. Mr. Kufner.

**GERMAN 501. INTRODUCTION TO GERMANIC LINGUISTICS**

Fall term in alternate years. Credit four hours. Mr. van Coetsem.

**GERMAN 502. GOTHIC**

Spring term in alternate years. Credit four hours. Mr. van Coetsem.

**GERMAN 503-504. OLD SAXON, OLD HIGH GERMAN, OLD LOW FRANCONIAN, OLD FRISIAN**

Throughout the year. Given in alternate years. Credit four hours a term. Prerequisite: Linguistics 201. Mr. van Coetsem.

**GERMAN 509-510. OLD NORSE**

Throughout the year. Credit four hours a term.

**GERMAN 651-652. SEMINARS IN GERMANIC LINGUISTICS**

Throughout the year, subject to the needs of students and to the limitations of staff time. Credit four hours a term.

Seminars will be set up in a variety of topics which may include the following: Comparative Germanic Linguistics, Typology of the Germanic Languages, Primitive Nordic, Runology, Computational Research on Modern German, Transformational Analysis of German, German Dialectology, Dutch Dialectology, Modern Frisian, and other topics.

**HINDI 401. HISTORY OF HINDI**

Fall term in alternate years. Credit four hours. Prerequisite: Hindi 101-102 or equivalent and Linguistics 202. Mr. Fairbanks.

**HINDI 600. SEMINAR IN HINDI LINGUISTICS**

Either term. Credit three hours. Prerequisite: consent of the instructor. Mr. Fairbanks, Mr. Gair, or Mr. Kelley.

**INDONESIAN 403. LINGUISTIC STRUCTURE OF INDONESIAN**

Either term. Credit four hours. Prerequisite: Indonesian 101-102 or equivalent and Linguistics 201. Mr. Wolff.

**ITALIAN 431. STRUCTURE OF ITALIAN**

Fall term in alternate years. Credit four hours. Prerequisite: qualification in Italian. Mr. Hall.

**ITALIAN 432. ITALIAN DIALECTOLOGY**

Spring term in alternate years. Credit four hours. Mr. Hall.

**ITALIAN 433. OLD ITALIAN TEXTS**

Fall term in alternate years. Credit four hours. Prerequisite: consent of the instructor. Mr. Hall.

**ITALIAN 435. HISTORY OF THE ITALIAN LANGUAGE**

Fall term in alternate years. Credit four hours. Prerequisite: qualification in Italian and Linguistics 201. Mr. Hall.

**ITALIAN 600. SEMINAR IN ITALIAN LINGUISTICS**

Each term. Credit four hours. Admission by permission of the instructor. Mr. Hall.

**JAPANESE 404. LINGUISTIC STRUCTURE OF JAPANESE**

Spring term in alternate years. Credit four hours. Prerequisite: Japanese 102 or consent of the instructor, and Linguistics 201. Mr. McCoy.

A descriptive analysis of present-day Japanese, with emphasis on its phonetics, phonemics, morphology, and syntax. Relevant historical aspects of Japanese will also be covered.

**QUECHUA 600. SEMINAR IN QUECHUA LINGUISTICS**

Either term. Credit to be arranged. Admission by permission of the instructor. Mr. Solá.

**RUSSIAN 401-402. HISTORY OF THE RUSSIAN LANGUAGE**

Throughout the year in alternate years. Credit four hours a term. Prerequisite: qualification in Russian and Linguistics 201-202. Mr. Leed.

The study of the divisions of the Russian language chronologically and geographically; the relationships of the Russian language, the Slavic group, the Indo-European group; the changes in the sounds and forms of the Russian language; vocabulary borrowings from Eastern and Western languages.

**RUSSIAN 403. LINGUISTIC STRUCTURE OF RUSSIAN**

Fall term in alternate years. Credit four hours. Prerequisite: qualification in Russian and Linguistics 201. Mr. Leed.

**RUSSIAN 501. OLD CHURCH SLAVIC**

Fall term in alternate years. Credit four hours.

**RUSSIAN 502. OLD RUSSIAN**

Spring term in alternate years. Credit four hours.

**RUSSIAN 600. SEMINAR IN SLAVIC LINGUISTICS**

Offered in accordance with student needs. Credit four hours. Mr. Foos, Mr. Leed, or Mr. Olmsted.

**RUSSIAN 611. SEMINAR IN RUSSIAN DIALECT GEOGRAPHY**

Fall term. Credit four hours. Prerequisite: consent of the instructor. Mr. Leed.

**SPANISH 401. HISTORY OF THE SPANISH LANGUAGE**

Fall term in alternate years. Credit four hours. Prerequisite: qualification in Spanish and Linguistics 201. Mr. Lozano or Mr. Saltarelli.

The development of Spanish phonology, grammar, and lexicon from its Latin origin to modern times.

**SPANISH 402. OLD SPANISH**

Spring term in alternate years. Credit four hours.

Linguistic analysis of Old Spanish texts with special emphasis on morphology and syntax.

**SPANISH 403. THE GRAMMATICAL STRUCTURE OF SPANISH**

Fall term. Credit four hours. Prerequisite: qualification in Spanish and Linguistics 201. Mr. Lozano or Mr. Saltarelli.

Descriptive analysis of the morphological and syntactical structure of present-day standard Spanish.

**SPANISH 501. LINGUISTIC STRUCTURES OF IBERO-ROMANCE**

Fall term in alternate years. Credit four hours.

Analysis in depth of one or more dialects, e.g., Catalan, Portuguese, Galician, or Judeo-Spanish.

**SPANISH 600. SEMINAR IN IBERO-ROMANCE LINGUISTICS**

Offered in accordance with student needs. Credit four hours. Mr. Lozano, Mr. Saltarelli, or Mr. Solá.

**TAGALOG 403. LINGUISTIC STRUCTURE OF TAGALOG**

Either term. Credit four hours. Prerequisite: Linguistics 201. Mr. Wolff.

**RELATED COURSES**

**ANTHROPOLOGY 453. ETHNOLINGUISTICS**

Fall term. Credit four hours.

A survey of problems and findings in the interrelations of language and culture.

**CLASSICS 423. VULGAR LATIN**

**CLASSICS 424. ITALIC DIALECTS**

**H.D.&F.S. 414. SEMINAR IN LANGUAGE DEVELOPMENT**

Fall term. Credit three hours. Mr. Levin.

The development of language during infancy and early childhood will be considered. The topics to be covered include theories of acquisition of language, the learning of sounds, grammar, meanings, and pathologies which involve language.

**PHILOSOPHY 215. SEMANTICS**

**PHILOSOPHY 590. PHILOSOPHY OF LANGUAGE**

**PHILOSOPHY 595. SEMANTICS AND LOGIC**

**PSYCHOLOGY 215. LINGUISTICS AND PSYCHOLOGY**

**PSYCHOLOGY 313. COGNITIVE PROCESSES**

**PSYCHOLOGY 416. PSYCHOLOGY OF LANGUAGE**

**PSYCHOLOGY 517-518. SEMINAR IN LANGUAGE AND THINKING**

**PSYCHOLOGY**

Faculty: Henry A. Alker, Alfred L. Baldwin, Harley A. Bernbach, Jack Bradbury, Urie Bronfenbrenner, Richard B. Darlington, William C. Dilger, Eleanor J. Gibson, James J. Gibson, Herbert F. Ginsberg, Bruce P. Halpern, Stephen C. Jones, William W. Lambert, Eric H. Lenneberg, Harry Levin, James B. Maas, Robert B. MacLeod, Leo Meltzer, Ulric Neisser, Dennis T. Regan, Henry N. Ricciuti, Bernard C. Rosen, Thomas A. Ryan, M. E. P. Seligman, Fred Stollnitz, George J. Suci, G. W. Wilcox.

Field Representative: Eleanor J. Gibson, Morrill Hall.

## MAJOR AND MINOR SUBJECTS

Developmental Psychology	History and Systems of Psychology
Differential Psychology and Psychological Tests	Mathematical Psychology
Experimental Psychology	Personality and Social Psychology
Experimental Psychopathology	Physiological Psychology
	Psycholinguistics

The following are available only as minor subjects:

Comparative Psychology  
General Psychology  
Industrial Psychology

Applicants for admission in Psychology are required to submit scores for the Graduate Record Examination (Advanced Test in Psychology and Aptitude Test) and for the Miller Analogies Test. An undergraduate major in psychology is desirable, but not required. Records of applicants are judged in terms of performance in mathematics and natural sciences as well as in psychology. Candidates for a terminal Master's degree are not accepted.

Special requirements of the Field, such as a statistics or language requirement, are determined by a Conference consisting of the graduate students and the faculty in the Field. The student selects his program of study individually, in consultation with his Special Committee. All students will have some supervised teaching experience during their term of study.

The examination for Admission to Candidacy is normally taken during the third year of graduate work and is both written and oral. The Final Examination for the Ph.D. is an oral defense of the thesis. All oral examinations are administered by the Special Committee with the addition of one member appointed by the Field Representative.

**RESEARCH FACILITIES.** The top two floors of Morrill Hall contain offices, classrooms, and teaching laboratories of the Field. Graduate and faculty research is conducted at the Cornell Research Park, at White Hall, and at Liddell Laboratory.

Most experimental research using human subjects is done at the Research Park. A large newly equipped shop is also located there.

White Hall provides special rooms for research in problems of perception and cognition and well equipped, one-way observation rooms for experiments in social psychology. Cooperation at the local schools permits field research in the area of Developmental Psychology.

The Howard S. Liddell Laboratory of Comparative and Physiological Psychology includes an electrophysiological laboratory, shops, darkroom, surgery, histology laboratory, and facilities for research with monkeys, dogs, and other laboratory animals.

**FINANCIAL AID.** In addition to general fellowships open to all Fields, teaching fellowships and research assistantships, the following fellowships are specifically for students in this Field:

**NATIONAL INSTITUTES OF HEALTH TRAINEESHIPS IN  
EXPERIMENTAL AND SOCIAL PSYCHOLOGY**

Stipend \$1,800 to \$2,400 plus tuition and General Fee.

**JOHN WALLACE DALLENBACH FELLOWSHIP IN EXPERIMENTAL  
PSYCHOLOGY**

Stipend \$2,700 plus tuition and General Fee.

## Areas of Specialization

### DEVELOPMENTAL PSYCHOLOGY

A. L. Baldwin, U. Bronfenbrenner, E. J. Gibson, H. P. Ginsburg, E. Lenneberg, H. Levin, H. Ricciuti, and G. J. Suci.

Specialization in this area normally involves participation in a program jointly sponsored by the Fields of Psychology and Human Development. The program, which emphasizes cognitive development, may be entered via either Field. Training in research skills in both Fields is recommended. Current research interests of the faculty include development of language, perception and thinking, intellectual development in natural settings, conceptual and affective behavior in infancy, behavioral maturation, and cognitive socialization.

### DIFFERENTIAL PSYCHOLOGY AND PSYCHOLOGICAL TESTS

H. A. Alker and R. B. Darlington.

Training within the Field of Psychology emphasizes psychometric theory—test theory, scaling, and factor analysis—and its applications both in psychological research and in practical settings. Excellent relations are maintained with the Fields of Education and Human Development and Family Studies, where training in the use of specific tests is offered.

### EXPERIMENTAL PSYCHOPATHOLOGY

H. A. Alker and M. E. P. Seligman.

This area is concerned primarily with research on animal subjects relating to the effects of stress upon emotional behavior, disruption of performance, and "experimental neurosis," and the relation of these phenomena to human psychopathology.

### EXPERIMENTAL PSYCHOLOGY

H. A. Bernbach, E. J. Gibson, J. J. Gibson, B. P. Halpern, E. Lenneberg, H. Levin, J. B. Maas, R. B. MacLeod, U. Neisser, T. A. Ryan, M. E. P. Seligman, F. Stollnitz, and G. W. Wilcox.

Experimental psychology is the study of basic processes in both humans and animals: learning, memory, motivation, perception, sensitivity, and thinking. An individual student will usually develop a special interest in one of these basic processes, although he should be familiar with the whole area. Both experimental method and the facts and theories derived from experimental observation are stressed. Some of the problems now under investigation are the nature of discrimination, attention, the perceiving of the environment, perceptual learning and development, the transmission of (visual and acoustic) information, the development of concepts, the formation of learning sets, classical and instrumental conditioning, the acquisition of helplessness and fear, stress and emotion, memory, and the ability to respond to symbols.



## HISTORY AND SYSTEMS OF PSYCHOLOGY

H. A. Alker, R. B. MacLeod, M. E. P. Seligman.

This area is usually studied as a minor in conjunction with major specialization in one of the substantive subjects of psychology. Students who major in history and systems are expected to take a substantial minor in history or philosophy of science. A reading knowledge of the relevant foreign languages is considered essential for both majors and minors.

## MATHEMATICAL PSYCHOLOGY

H. A. Bernbach and G. W. Wilcox.

The objective of this subject as a major is to train psychologists to develop theories and relations in their chosen area of interest, and to express these in mathematical form. The general requirements for majors are a very strong minor in the empirical content area of their choice, a dissertation that combines original empirical work in the content area with the application of mathematical models, computer experience, and training in mathematics at roughly the M.A. level.

The minor program is intended to give students the mathematical tools necessary to support their major area of interest. Courses in mathematics will generally be recommended in addition to departmental courses in mathematical behavior theory and methodology.

## PERSONALITY AND SOCIAL PSYCHOLOGY

H. A. Alker, U. Bronfenbrenner, S. C. Jones, W. W. Lambert, L. Meltzer, D. Regan and B. Rosen.

Students may place varying emphases on personality and on social psychology, even concentrating exclusively upon one or the other aspect if they wish. Staff research interests in personality include: aggressive behavior, anxiety and defenses, experimental psychodynamics, personality assessment, and emotional communication. Social psychology is taught jointly by members of the Graduate Fields of Psychology and Sociology. Majors admitted via Psychology often choose one minor within Sociology. Other relevant minors include anthropology, child development, organizational behavior, and statistics. Some current research interests of the faculty include: character development in the Soviet Union, nonverbal communication, new approaches to observation methodology, interpersonal evaluations, guilt and persuasion, attitude change, and cross-cultural studies of socialization.

## PHYSIOLOGICAL PSYCHOLOGY

J. Bradbury, B. P. Halpern, and E. Lenneberg.

The student is expected to develop his skill in a variety of biological techniques as well as to become firmly grounded in the experimental analysis of behavior. Students are advised to have one of their minor subjects in physiology, biochemistry, neurobiology and behavior, evolutionary biology, veterinary medicine, or physics. Research interests include brain-behavior relationships and sensory psychophysiology.

## PSYCHOLINGUISTICS

E. J. Gibson, E. Lenneberg, H. Levin, R. B. MacLeod, U. Neisser.

This area combines aspects of psychology and linguistics in the study of the psychological representation of language, the acquisition of language, and its use in cognition and communication. Some of the interests currently pursued in the Department are: the effects of linguistic structure on linguistic and nonlinguistic behavior, the generality of language processing mechanisms in other mental operations, the nature of the switching mechanisms in dialect and language choice, the acquisition of reading skill, and the genesis of language investigated by means of developmental and comparative methods.

Students majoring in psycholinguistics frequently select general linguistics as a minor.

## COMPARATIVE PSYCHOLOGY

J. Bradbury, W. C. Dilger, M. E. P. Seligman, and F. Stollnitz.

Comparative psychology is the study of similarities and differences in the behavior of various species. Staff research interests include evolution of behavior, primate behavior, classical and instrumental conditioning, discrimination learning and perception, and pathological behavior.

## GENERAL PSYCHOLOGY

Staff.

General psychology is designed as a minor for students majoring in some other Field, who wish to study some special combination of topics which overlaps with several of the areas listed above.

## INDUSTRIAL PSYCHOLOGY

J. B. Maas and T. A. Ryan.

This area may be elected as a minor subject by students in Psychology or other Fields such as Industrial and Labor Relations, Business and Public Administration, and Engineering. The emphasis is on research methods and results concerning the efficiency of performance, development of skill in complex tasks, effects of environment and methods of work, motivation, job satisfaction, and the evaluation of performance.

## Courses

### 301. AN INFORMATION PROCESSING APPROACH TO PSYCHOLOGY

Fall term. Credit three hours. Prerequisite: one year of mathematics or a physical science or consent of the instructor. Mr. Bernbach.

Introductory treatment of human behavior as the behavior of an information processing system. Topics covered include input and coding of information (detection and perception), storage and retrieval of information (learning and memory), and output processes (skill learning and performance).

Also covered is a treatment of behavior as a choice among alternatives and the bases of such choices (motivation).

### 305. PERCEPTION

Fall term. Credit four hours. Prerequisite: two courses in psychology including 101. Mr. Neisser.

The basic phenomena of visual and auditory perception studied in terms of the stimulus variables on which they depend and of the mechanisms involved. Topics include the detection of weak stimuli, perceptual constancy and illusion, visual and auditory space perception, motion, and perceptual adaptation.

### 306. LEARNING

Spring term. Credit four hours. Prerequisite: 101 or equivalent. Mr. Stollnitz.

The fundamental conditions and principles of learning, both animal and human. The basic phenomena of operant conditioning, human verbal and motor learning, discrimination learning, and serial learning will be studied experimentally. Traditional and contemporary theories of learning will be reviewed, and selected experimental literature will be discussed with special emphasis upon recent developments in the field.

### 307. MOTIVATION

Fall term. Credit four hours. Prerequisite: 101 and 201, or 306, or consent of the instructor. Mr. Alker.

Factors controlling the initiation, direction, and intensity of activity. Methods of research with emphasis upon experimental and statistical controls. Evaluation of evidence on major theories of motivation such as instinct theory, psychoanalysis, and behavioristic drive theory.

### 309. DEVELOPMENT OF PERCEPTION AND ATTENTION

Spring term. Credit four hours. Prerequisite: 305 or consent of instructor. Mrs. Gibson.

Selection and processing of stimulus information—objects, space, events, and coded stimuli—in evolution and in individual development; theories of perceptual learning and experimental methods of studying them.

### [311. FEELING AND EMOTION]

Fall term. Credit four hours. Prerequisite: nine hours in psychology or consent of the instructor. Not offered in 1970-71.

### 313. COGNITIVE PROCESSES

Fall term. Credit four hours. Prerequisite: six hours of psychology or consent of the instructor.

An examination of the mental processes involved in language learning and use, concept formation, and problem solving, and the relation between language and thinking. Students are required to carry out a supervised experimental or observational study.

### 323. PHYSIOLOGICAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisite: 101 or equivalent, 201 or a 300-level laboratory course in psychology, Biological Sciences 101-102 or equivalent, and Chemistry 103-104 or equivalent. Mr. Halpern.

An examination of neuroendocrine and neurophysiological functions related to emotion, learning, eating, and perception.

[324. PSYCHOBIOLOGY]

Spring term. Credit four hours. Prerequisite: a grade of at least B in 323 and consent of the instructor. Not offered in 1970-71.

325. ABNORMAL PSYCHOLOGY

Fall term. Credit four hours. Prerequisite: nine hours of psychology, or consent of the instructor.

An introduction to the study of disordered behavior. Description of major syndromes, investigations and theories of etiology, and approaches to treatment will be covered.

[326. COMPARATIVE PSYCHOLOGY]

Spring term. Credit four hours. Prerequisite: 101, or Biological Sciences 320, or consent of the instructor. Not offered in 1970-71.

[335. PSYCHOLOGICAL PROBLEMS OF ADVERTISING AND MARKET RESEARCH]

Spring term. Credit four hours. Prerequisite: 101 and 350. Mr. Maas. Not offered in 1970-71.

350. STATISTICS AND RESEARCH DESIGN

Spring term. Credit four hours. Prerequisite: 101. Mr. Darlington.

Devoted about equally to elementary applied statistics (both estimation and hypothesis testing) through one-way analysis of variance, and to general problems in the design and analysis of research projects.

381. SOCIAL PSYCHOLOGY (Sociology 381)

Either term. Credit four hours. Prerequisite: three hours of psychology and three hours of sociology. Mr. Lambert.

Analysis of the history, concepts, methods, and theories used to describe and conceptualize the ways in which people react to one another in social settings and in the laboratory. Students will work individually or as teams on projects, using experimental or other empirical methods. The topics for lectures and reading will include socialization, attitude change, communication, interpersonal influence, impression formation, leadership, and propaganda.

385. THEORIES OF PERSONALITY (Sociology 385)

Fall term. Credit four hours. Prerequisite: 101 or 102 or consent of the instructor. Mr. Lambert.

A critical survey of the concept of personality in literature, the social sciences, and psychology. A number of the modern specialists will be discussed at some length, and recent empirical and experimental work that has grown out of their thought will be analyzed. The empirical relation of personality notions to some philosophical beliefs and literary production will be considered. The emphasis will be mainly upon "normal" personality.

387. PSYCHOLOGICAL ASPECTS OF POLITICAL BEHAVIOR  
(Sociology 387)

Fall term. Credit four hours. Prerequisite: a course in social psychology, or consent of the instructor. Mr. Alker.

A survey covering the authoritarian personality, political paranoia, affective determinants of "left" and "right" ideology, characteristics of active political participants. Machiavellianism, stress and political decision making, need for power, and political attitude change. An empirical, hypothesis-testing approach will be adopted.

#### 401. PSYCHOLOGICAL TESTING I

Fall term. Credit four hours. Prerequisite: six hours in psychology and a course in elementary statistics. Mr. Darlington.

Emphasis is on the logical and mathematical problems in the interpretation, evaluation, and construction of tests. No training given in administering tests.

#### 402. PSYCHOLOGICAL TESTING II

Spring term. Credit four hours. Prerequisite: 401 or consent of the instructor. Mr. Darlington.

A more advanced treatment of the topics discussed in Psychology 401.

#### 410. INDIVIDUAL DIFFERENCES AND PERSONALITY

Spring term. Credit four hours. Prerequisite: seven hours of psychology, or consent of the instructor. Mr. Alker.

Survey of theory and research concerning individual differences in personality, intelligence, creativity, anxiety, learning, perception, motivation, attitudes, and attitude change. Emphasis will be given to the applicability of different research techniques.

#### 412. RESEARCH DESIGN IN PERSONALITY AND SOCIAL PSYCHOLOGY

Spring term. Credit four hours. Mr. Darlington.

#### [414. PRACTICUM AND SEMINAR IN PSYCHOLOGICAL TESTING]

Spring term. Credit four hours. Prerequisite: 402 and consent of the instructor. Not offered in 1970-71.

#### 416. PSYCHOLOGY OF LANGUAGE

Spring term. Credit four hours. Prerequisite: 313 or consent of instructor.

An advanced treatment of the nature of the human capacity for language, the reading process, social and psychological aspects of bilingualism, speech perception and production. Instruction will be supplemented by experimental exercises.

#### 423. BEHAVIORAL MATURATION (Biological Sciences 423)

Fall term. Credit three hours. Prerequisite: familiarity with psychological theories of learning and development and one year of college biology. Mr. Lenneberg.

Emergence of behavior will be studied in the light of developmental biology, including behavior genetics, neuroembryology and morphogenesis, physical maturation of the brain, transformation and allometry as well as retarding influences from the environment.

#### 424. BRAIN AND BEHAVIOR (Biological Sciences 424)

Spring term. Credit four hours. Prerequisite: familiarity with theories of perception, memory, and physiological psychology, or permission of the instructor. Mr. Lenneberg.

A theoretical introduction to human neurology for psychologists. This survey of clinical symptoms and their etiology is designed to enable students to make use of disease for research purposes.

#### 426. EXPERIMENTAL PSYCHOPATHOLOGY

Spring term. Credit four hours. Prerequisite: consent of instructor. Mr. Seligman.

The application of experimental methods to behavior disorders. A survey of current investigations of etiology and treatment with special emphasis upon a scientific approach to pathology.

427. SENSORY FUNCTION (Biological Sciences 427)

Fall term. Credit three hours. Prerequisite: Biological Sciences 320 or permission of instructors. Mr. Halpern and Mr. Tapper.

Sensory receptors and the central nervous system transformation of afferent activity will be considered in relation to human and animal psychophysical data and to the adaptive significance of behavior. The receptor will be examined in terms of anatomy, biochemistry, biophysics of transduction, and the central nervous system control of peripheral input. Offered in alternate years.

427A. SENSORY FUNCTION LABORATORY (Biological Sciences 427A)

Fall term. Credit two hours. Prerequisite: 427 (or concurrent registration) and permission of instructors. Enrollment limited to fifteen students. Messrs. Halpern and Tapper.

Experiments on the principles of receptor function and afferent neural activity. Offered in alternate years.

429. PSYCHOPHYSICS AND SCALING

Spring term. Credit four hours. Prerequisite: one year of calculus and a course in experimental psychology, or consent of the instructor. Mr. Wilcox.

Emphasis on the theory and application of quantification procedures in psychology. Topics include subjective magnitudes, auditory and visual discrimination, sensitivity, detection theory, data theory, scaling methods. Offered in alternate years.

461. HUMAN LEARNING AND MEMORY

Spring term. Credit four hours. Prerequisite: 101, 201 or 301, or equivalent. Mr. Bernbach.

Basic processes of human learning and memory, particularly for simple verbal material. Emphasis on the storage and retrieval of information as the fundamental unit.

462. DISCRIMINATION LEARNING

Fall term. Credit four hours. Prerequisite: 306 or equivalent. Mr. Stollnitz.

Theories of discrimination learning will be examined in the light of data. Discrimination performance of human and nonhuman subjects in acquisition, reversal, transfer, and learning-set experiments will be included. Laboratory work will emphasize individual projects.

465. MATHEMATICAL BEHAVIOR THEORY

Fall term. Credit four hours. Prerequisite: one year of calculus. Mr. Wilcox.

The purpose of this course is to give a brief overview of current developments in mathematical psychology and to develop techniques for the application of mathematics to psychological theory. Topics covered include choice behavior, decision theory, psychophysics, memory and learning theory, and information processing models of behavior.

466. THEORIES OF VISION

Spring term. Credit four hours. Prerequisite: consent of instructor. Mr. Gibson.

471-472. STATISTICAL METHODS IN PSYCHOLOGY

Throughout the year. Credit four hours each term. Prerequisite: 201 or consent of the instructor; 471 is prerequisite to 472. Mr. Ryan.

An analysis of the methods for treating various kinds of psychological data. Fall term: tests of significance and confidence limits, analysis of variance and correlation. Spring term: complex designs in analysis of variance, analysis of trends and covariance, multiple and curvilinear correlation, introduction to factor analysis.

476. INSTRUMENTATION FOR PSYCHOLOGICAL RESEARCH

Fall term. Credit three hours. Enrollment limited to ten students. Prerequisite: consent of the instructor. Lecture and laboratory totaling three hours. Messrs. Wilcox, Stollnitz, and staff.

Principles and use of basic circuitry, digital logic, amplifiers and transducers, mechanical and optical devices, photography.

480. ATTITUDES AND ATTITUDE CHANGE (Sociology 480)

Spring term. Credit four hours. Prerequisite: three hours of psychology and three hours of sociology. Mr. Regan.

A systematic survey of theory and research on attitudes and attitude change.

481. ADVANCED SOCIAL PSYCHOLOGY (Sociology 481)

Fall term. Credit four hours. Prerequisite: a course in social psychology or consent of the instructor. Mr. Regan.

Emphasis is on the empirical study of social psychological phenomena. Students will be introduced to empirical laboratory and field methods used in social psychology. Substantive problems will provide the focus for the demonstration and use of these techniques.

483. SOCIAL INTERACTION (Sociology 483)

Fall term. Credit four hours. Prerequisite: written consent of the instructor, three hours in psychology, and three hours in sociology. Mr. Hayes.

A field and laboratory course dealing with the major dimensions of interpersonal perception and behavior. The relation of these dimensions to self-conception, social roles, group structures and dynamics is examined. Contemporary research is stressed in the readings. Student projects are an integral part of the course.

484. EXPERIMENTAL GROUP DYNAMICS (Sociology 484)

Spring term. Credit four hours. Prerequisite: a course in statistics and a course in social or experimental psychology. Mr. Meltzer.

A practicum. Supervised research experience in the design, execution, and analysis of experimental research on topics such as group cohesiveness, group pressures, group goals, leadership, group performance, and interpersonal influence and communication. Students will read and discuss experimental studies as well as pertinent theoretical articles.

486. GROUPS AS SOCIALIZING AGENTS (Sociology 486)

Spring term. Credit four hours. Prerequisite: two courses in psychology or sociology. Mr. Bronfenbrenner.

The course critically examines existing theory and research on the role of groups in shaping the behavior and values of their members. Particular attention is focused on such processes as modeling, social reinforcement, and pressure to conform in enduring social structures such as the family, the

peer group, work teams, and business organizations. Students are expected to work independently in assembling and evaluating material relevant to particular issues.

[488. INDIVIDUAL AND SOCIETY IN THE SOVIET UNION]

Spring term. Credit four hours. Prerequisite: consent of the instructor. Will be conducted as a seminar. Mr. Bronfenbrenner. Not given in 1970-71.

489. SELECTED TOPICS IN SOCIAL PSYCHOLOGY (Sociology 489)

Either term. Credit four hours. Prerequisite: consent of the instructor, three hours of psychology, and three hours of social psychology or sociology. Mr. Jones.

A small discussion seminar dealing with issues in both social and personality psychology. Initial discussions will focus on specific areas of the field such as interpersonal evaluation, attitude change, and group processes. Subsequently the discussions will become more general and raise such questions as what major themes social psychologists are or should be studying and what the appropriate units of analysis of social behavior are.

[490. PERSISTENT PROBLEMS IN PSYCHOLOGY]

Fall term. Credit four hours. Not offered in 1970-71.

496. SUPERVISED STUDY

Either term. Credit two hours. Staff.

BIOLOGICAL SCIENCES 320. NEUROBIOLOGY AND BEHAVIOR

Spring term. Credit three hours. Prerequisite: Biological Sciences 101-102 or 103-104. Messrs. Camhi, Eisner, Emlen, Gilbert, Halpern, Howland, O'Brien, Rosenblatt, and Mrs. Salpeter.

BIOLOGICAL SCIENCES 421. COMPARATIVE VERTEBRATE ETHOLOGY

Fall term. Credit three hours. Prerequisite: Biological Sciences 101-102, or 103-104 and permission of the instructor. Mr. Dilger.

BIOLOGICAL SCIENCES 521-522. BRAIN MECHANISMS AND MODELS

Throughout the year. Credit four hours a term. Prerequisite: one year of calculus and one year of biological sciences or psychology, and consent of the instructor. Mr. Rosenblatt, with assistance of guest lecturers.

## Graduate Courses and Seminars

Primarily for graduate students, but with the consent of the instructor may be taken by qualified undergraduates. Approximately five graduate courses or seminars will be offered each term, the selection to be determined by the needs of the students. Prior to the registration period, the list of courses and seminars for the following term will be posted, specifying instructors, topics to be covered, and hours of meeting. Only grades of S or U will be given in the courses listed below.

501-502. GENERAL SEMINAR FOR BEGINNING GRADUATE STUDENTS

Either term. Credit three hours.



192 PSYCHOLOGY

511-512. PERCEPTION

Either term. Credit four hours.

513-514. LEARNING

Either term. Credit four hours.

515-516. MOTIVATION

Either term. Credit four hours.

517-518. LANGUAGE AND THINKING

Either term. Credit four hours.

519-520. COGNITION

Either term. Credit four hours.

521-522. PSYCHOBIOLOGY

Either term. Credit four hours.

523-524. PHYSIOLOGICAL PSYCHOLOGY

Either term. Credit four hours.

525-526. MATHEMATICAL PSYCHOLOGY

Either term. Credit four hours.

531-532. HISTORY OF PSYCHOLOGY

Either term. Credit four hours.

541-542. STATISTICAL METHODS

Either term. Credit four hours.

543-544. PSYCHOLOGICAL TESTS

Either term. Credit four hours.

545-546. METHODS IN SOCIAL PSYCHOLOGY

Either term. Credit four hours.

547-548. METHODS OF CHILD STUDY

Either term. Credit four hours.

561-562. HUMAN DEVELOPMENT AND BEHAVIOR

Either term. Credit four hours.

575-576. PERSONALITY

Either term. Credit four hours.

577-578. INDUSTRIAL PSYCHOLOGY

Either term. Credit four hours.

581-582. EXPERIMENTAL PSYCHOLOGY

Either term. Credit four hours.

583-584. PROSEMINAR IN SOCIAL PSYCHOLOGY (Sociology 583-584)

Either term. Credit four hours.

Critical analysis of the major current theories and research in social psychology.

585. SOCIAL STRUCTURE AND PERSONALITY (Sociology 585)

Fall term. Credit four hours. Mr. Rosen.

A discussion seminar examining the impact of structural factors on personality development, and on the ways in which individual internal states and behavior patterns affect the functioning of social systems.

591-592. EDUCATIONAL PSYCHOLOGY

Either term. Credit four hours.

595-596. THE TEACHING OF PSYCHOLOGY

Either term. Credit four hours.

601-602. PRACTICUM IN THE TEACHING OF PSYCHOLOGY

Either term. Supervisor and credit hours to be individually arranged.

611-612. PRACTICUM IN RESEARCH

Either term. Apprenticeship in research with individual staff members. The problem, the supervisor, and credit hours are to be individually arranged.

621-622. THESIS RESEARCH

Either term. Supervisor and credit hours to be individually arranged.

681-682. SEMINAR IN SOCIAL PSYCHOLOGY

Either term. Credit four hours.

Research oriented analysis of selected topics in social psychology.

683. RESEARCH PRACTICUM IN SOCIAL PSYCHOLOGY

Fall term. Credit four hours.

685. SEMINAR: SOCIAL PSYCHOLOGY OF MODERNIZATION  
(Sociology 685)

Spring term. Credit four hours. Mr. Rosen.

An analysis of the interacting effects of social structure and personality on social change in developing countries.

687-688. SOCIAL PSYCHOLOGY AND PERSONALITY COLLOQUIA  
(Sociology 687-688)

Either term. Credit two hours. Mr. Meltzer and visiting staff.

Weekly lectures by visiting and Cornell faculty, sponsored by the Inter-departmental Program in Social Psychology and Personality, are open to the general public. Graduate students may earn credit by regular attendance, reading selected writings by each speaker, and writing an integrative term paper. Each semester the colloquia will concentrate on a new theme.

## SOCIOLOGY

Faculty: Gordon H. DeFries, Allan G. Feldt, Rose K. Goldsen, Gerald Gordon, Donald P. Hayes, Neil Henry, Stephen C. Jones, Joseph A. Kahl, William W. Lambert, Parker G. Marden, Robert McGinnis, Leo Meltzer, Marshall W. Meyer, D. Ian Pool, Dennis Regan, Bernard C. Rosen, William H. Starbuck, Gordon F. Streib, J. Mayone Stycos, Nicholas Tavuchis, William F. Whyte, Robin M. Williams, Jr.

Field Representative: Parker G. Marden, McGraw Hall.

## MAJOR SUBJECTS

General Sociology<sup>11</sup>  
 Demography-Ecology<sup>12</sup>  
 Research Methodology<sup>12</sup>  
 Social Organization and Change<sup>12</sup>  
 Social Psychology<sup>12</sup>

## MINOR SUBJECTS

Demography-Ecology  
 Research Methodology  
 Social Organization and Change  
 Social Psychology

**ADMISSION REQUIREMENTS.** Candidates for the Master's degree should have an undergraduate degree from a recognized college or university. The required subjects of the Cornell M.A. program or their equivalent are prerequisite to candidacy for the Ph.D. degree in Sociology. In addition to a general background in the social sciences, the entering student should have some knowledge of the basic concepts and applications of quantitative analysis. Graduate Record Examination scores are required.

The prospective student is advised to consult the comprehensive brochure *Sociology at Cornell*, which may be obtained by writing to the Field Representative.

All applications for admission to graduate study in the Field of Sociology and inquiries concerning financial aid should be made directly to the Field Representative, Department of Sociology, McGraw Hall.

**LANGUAGE REQUIREMENTS.** A candidate for the degree of Ph.D. must demonstrate proficiency in one modern language other than his native tongue; or upon the unanimous approval of the student's Special Committee, a specified level of preparation in mathematics may be substituted. Any Special Committee may, at its discretion, require knowledge of additional foreign languages.

The modern language or mathematics requirement for the M.A. candidate shall be determined by his Special Committee.

**FIELD REQUIREMENTS.** M.A. candidates major in general sociology, which covers the four specific subjects of the Field of Sociology: social organization and change, research methodology, demography-ecology, and social psychology; and students must demonstrate competence in each of these areas. Following the recommendations of their Special Committee, students entering Cornell with a Master's degree from other institutions will be required to make up deficiencies in the subjects specified for the Cornell M.A. degree.

Students in the Ph.D. program may register in general sociology initially, but must select one of the four major subjects described below before taking the Admission to Candidacy Examination. By the time of this examination, students are expected to have completed the course equivalent of the Cornell M.A. program.

All students in the Ph.D. program are required to have one year of directed research experience and one year of directed teaching experience during their program of study at Cornell. Exemptions from this requirement will be granted for appropriate previous experience or under special circumstances. Typically, for the student entering with a B.A., the research practicum would be scheduled to begin in the spring term of the first year of residence, and the teaching practicum would be scheduled for the third year of residence. Scheduling of the practicum for students entering with an M.A., while following the same general pattern, might be varied as circumstances require.

Procedures for examining candidates for the Master's degree will be

11. Required as major subject in the Master's degree program.

12. May be major subjects only in the Ph.D. program.

determined by the student's Special Committee. Part of this examination must be oral. It may also include a written examination, satisfactory completion of a Master's thesis or essay, or both. Any M.A. candidate who proposes to apply for Ph.D. candidacy must have selected his Ph.D. Special Committee prior to taking this examination, which under these circumstances may be combined with a Ph.D. qualifying examination.

The Ph.D. degree is normally expected to be completed within two to three years following completion of the M.A. degree by candidates in full-time residence. A diagnostic qualifying examination may be held at the option of either the candidate or his Special Committee; if so, it should be scheduled no later than the end of the second semester in residence. In very exceptional instances, at the discretion of the Special Committee, the qualifying examination may serve simultaneously as the Admission to Candidacy Examination. Normally, however, the Admission to Candidacy Examination will be scheduled at the end of the fourth semester of graduate work. At the completion of the student's thesis, an oral examination on it will be conducted by his Special Committee.

## Ph.D. Major Subjects and Requirements

**SOCIAL ORGANIZATION AND CHANGE.** When offered as a major: (1) a thorough knowledge of theories of and research in social organization and social change; (2) a working knowledge of research methods; (3) a detailed knowledge of two subfields in social organization such as the following: formal organization and bureaucracy, the family, ethnic relations, political sociology, social stratification, public opinion, sociology of religion, sociology of work.

When offered as a minor: a general knowledge of parts (1) and (2) of the above requirement and a working knowledge of one subfield.

**SOCIAL PSYCHOLOGY.** When offered as a major: (1) a thorough knowledge of social psychological theory and research, with emphasis upon current developments; (2) a working knowledge of the methodology of social psychological research; (3) a working knowledge of psychology, sociology, and relevant aspects of other related disciplines; and (4) detailed knowledge of some specialized aspect of social psychology to be selected by the student.

When offered as a minor: a general knowledge of parts (1) and (2) of the above requirements, as well as a working knowledge of whichever aspects of social psychology are relevant to the Ph.D. dissertation topic.

**DEMOGRAPHY-ECOLOGY.** When offered as a major: (1) a thorough knowledge of demographic and ecological theory and substantive research; (2) a thorough knowledge of the techniques of demographic and ecological data collection and analysis; (3) a working knowledge of the theory and methods of social organization and change.

When offered as a minor: a general knowledge of (1) and (2) above.

**RESEARCH METHODOLOGY.** When offered as a major: (1) a detailed knowledge of the logic of science; (2) a general knowledge of research design, data collection techniques, and analytic procedure; (3) a working knowledge of the theory of social organization and change; (4) a concentration of study in one of the areas listed in (1) and (2).

When offered as a minor: requirements (1), (2), and (3).

## Research Training Program

Members of the Field sponsor various social research programs and field projects in which graduate students may participate for purposes of research training. Research activities of the staff have included studies in intergroup relations (Messrs. Rosen and Williams), attitudes and values (Mrs. Goldsen, Messrs. Meltzer, Regan, and Williams), demography, urbanization, and ecology (Messrs. DeFries, Feldt, Marden, Pool, and Stycos), social gerontology (Messrs. Marden and Streib), complex organizations (Messrs. Gordon, Meyer, Starbuck, and Whyte), small groups (Messrs. Hayes and Meltzer), interpersonal relations (Mr. Jones), cross-cultural socialization (Messrs. Lambert and Rosen), cross-cultural stratification (Mr. Kahl), social systems analysis and theory construction (Messrs. Henry, McGinnis, Starbuck, and Williams), medical sociology (Messrs. DeFries and Marden), kinship (Messrs. Streib and Tavuchis), sociology of science (Messrs. Gordon and McGinnis), educational sociology (Mrs. Goldsen and Mr. Meyer). Many of these investigations have been done in cross-cultural settings: Africa (Mr. Pool), Latin America (Mrs. Goldsen, Messrs. Kahl, Marden, Rosen, Stycos, and Whyte), Europe (Messrs. Lambert, Streib, and Williams). Staff members also participate closely in teaching and research activities of the Center for International Studies and various area study programs.

## Courses

Courses numbered in the 500s or above are principally open to graduate students. Courses numbered in the 400s are open to advanced undergraduate majors as well as graduate students. *All course listings are subject to change.* Students should make final checks with the Department before registering.

### 402. SOCIAL THEORY

Spring term. Credit four hours. Prerequisite: consent of the instructor.

Survey of selected theories and concepts in contemporary sociology reviewed in historical perspective, in relation to the contributions of other social sciences, and in terms of present-day developments in theory and research. Throughout, emphasis will be placed on trends in contemporary social theory.

### 420. INTRODUCTION TO MATHEMATICAL SOCIOLOGY

Fall term. Credit four hours. Prerequisite: 101 and one year of college mathematics, or consent of the instructor.

Elementary mathematics as applied to sociological theory. Both deterministic and probabilistic models are considered. Stochastic probability processes are emphasized in relation to theories of social change.

### 423. ANALYSIS OF QUANTITATIVE DATA

Fall term. Credit four hours. Prerequisite: consent of the instructor.

Quantitative materials from current studies are analyzed by students. Problems of editing, classifying, and coding data are dealt with in the laboratory sessions. Students are expected to learn how to use IBM unit record equipment in their analyses. Scales, scores, and composite indexes are developed. Students will write their exercises as weekly research reports, which are annotated by the instructor and discussed in class.

#### 424. ANALYSIS OF QUALITATIVE DATA

Spring term. Credit four hours. Prerequisite: consent of the instructor.

This continuation of 423 emphasizes the equivalent problems which arise in analyzing qualitative research data.

#### 433. INTERNATIONAL URBANIZATION

Fall term. Credit four hours. Prerequisite: background in the social sciences or consent of the instructor.

An examination of the processes and prospects of urbanization in an international context. The growth, nature, and roles of urban centers in both developed and developing nations will be considered. Urbanization will be viewed from an interdisciplinary perspective.

#### 434. SOCIOLOGY OF HUMAN FERTILITY

Spring term. Credit four hours. Prerequisite: 230 or consent of the instructor.

Social and psychological factors affecting human fertility; review of research on programs of fertility control in the United States and abroad.

#### 435. MORTALITY AND MORBIDITY

Fall term. Credit four hours. Prerequisite: 230 or consent of the instructor.

The determinants and consequences of these demographic forces will be considered with special attention being paid to trends and differentials. The role of mortality in the "demographic transition" of both developed and underdeveloped areas will be examined. The demographic, sociological, and epidemiological approaches will be applied to selected problems involving mortality, illness, health, and medical care.

#### 438. HUMAN MIGRATION

Spring term. Credit four hours. Prerequisite: 230 or consent of the instructor.

An analysis of international and internal migration as it affects the social and economic structure of societies and the groups in movement. The major theoretical and methodological investigations will be examined from such varied perspectives as individual motivation and mathematical models of migration.

#### 441. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY I

Fall term. Credit four hours. Prerequisite: 101 or consent of the instructor.

Systematic analysis of the major institutions of kinship, stratification, economic activity, political structure, education, and religion. Special attention is given to values and their interrelations in the modern social order. A survey of the more important types of groups and associations making up a pluralistic nation is included.

#### 442. STRUCTURE AND FUNCTIONING OF AMERICAN SOCIETY II

Spring term. Credit four hours. Prerequisite: 441 or consent of the instructor.

Primary attention is directed to the study of interrelations of institutions, including analysis of the regulation of economic and political systems. Group cooperation and conflict are surveyed. Analysis of important processes of change in institutions, values, and social organizations.

#### 447. SOCIOLOGY OF MEDICINE

Fall term. Credit four hours. Prerequisite: consent of the instructor.

An analysis of health, illness, and the health professions and institutions from the sociological perspective. Topics to be considered will be the socialization of medical professionals, the organization of medical care, and patient-professional relationships.

**480. ATTITUDES AND ATTITUDE CHANGE**

Spring term. Credit four hours. Prerequisite: three hours of psychology and three hours of sociology.

A systematic survey of theory and research on attitudes and attitude change.

**481. EXPERIMENTAL SOCIAL PSYCHOLOGY**

Fall term. Credit four hours. Prerequisite: three hours of psychology and three hours of sociology or anthropology.

Students will be introduced to empirical laboratory and field methods used in social psychology. Substantive problems will provide the focus for the demonstration and use of these techniques.

**483. GROUP DYNAMICS**

Fall term. Credit four hours. Prerequisite: written consent of the instructor and three hours in psychology and three hours in sociology.

A field and laboratory course dealing with the major dimensions of interpersonal perception and behavior, and the relation to self-conception, social roles, group structure, and dynamics. Contemporary research is stressed in the readings. Student projects are an integral part of the course.

**484. EXPERIMENTAL GROUP DYNAMICS**

Spring term. Credit four hours. Prerequisite: a course in statistics and a course in social or experimental psychology.

A practicum. Supervised experience in the design, execution, and analysis of experimental research on topics such as group cohesiveness, group pressure, group goals, leadership, group performance, and interpersonal influence and communication. Students will read and discuss experimental studies as well as pertinent theoretical articles.

**488. INDIVIDUAL AND SOCIETY IN THE SOVIET UNION**

Spring term. Credit four hours. Prerequisite: consent of the instructor. Will be conducted as a seminar.

**489. SELECTED TOPICS IN SOCIAL PSYCHOLOGY**

Either term. Credit four hours. Prerequisite: consent of the instructor, three hours of psychology, and three hours of social psychology or sociology.

A small discussion seminar dealing with issues in both social and personality psychology. Initial discussions will focus on specific areas such as interpersonal evaluation, attitude change, and group processes. Subsequently, the discussions will become more general and raise such questions as what major themes social psychologists are or should be studying and what the appropriate units of analysis of social behavior are.

**491. SELECTED TOPICS IN SOCIOLOGY**

Either term. Credit four hours.

**492. SELECTED TOPICS IN SOCIOLOGY**

Either term. Credit four hours.

**497. SOCIAL RELATIONS SEMINAR**

Fall term. Credit four hours.

**501. THE METROPOLITAN COMMUNITY**

Fall term. Credit four hours. Prerequisite: consent of an instructor.

An interdisciplinary course focused upon social, political, and economic aspects of metropolitan communities. Viewed from the perspectives of demography, ecology, social organization, and planning, it will consider the emergence of a new societal form and its implications for contemporary America.

### 503. SOCIOLOGY OF SCIENCE

Fall term. Credit four hours. Prerequisite: consent of the instructor. Examination of the relationships between the scientist and society, and of the effects of the scientist on society and of society on the scientist.

### 511. THEORY OF CULTURE AND SOCIAL ORGANIZATION

Fall term. Credit four hours. Prerequisite: 402 or equivalent.

Analysis of recent conceptual development in theories of cultural and social systems. Special attention will be given to the work of Talcott Parsons and associates, with comparative study of alternative conceptual schemes.

### 520. MATHEMATICAL MODELS

Spring term. Credit four hours. Prerequisite: courses in calculus and probability or consent of the instructor.

A survey of contemporary social science research techniques, with particular emphasis on the work of James Coleman.

### 522. SURVEY OF SOCIOLOGICAL METHODS

Spring term. Credit four hours. Prerequisite: 321 and a statistics course or consent of the instructor.

A survey emphasizing interdisciplinary methodological convergences. Investigators from several disciplines report on research problems that are encountered and techniques used to cope with them.

### 523. FOUNDATIONS OF STATISTICAL ANALYSIS

Fall term. Credit four hours. Prerequisite: a course in statistics or consent of the instructor.

The logic of social research; sets and relations; measurement; probability models.

### 524. RESEARCH DESIGN AND STATISTICAL INFERENCE

Spring term. Credit four hours. Prerequisite: 523 and a course in statistics or consent of the instructor.

The logic of statistical inference, experimentation, and decision theory. Measures of association for cross-classification. Causal analysis of multivariate relations, using regression analysis and related techniques.

### 526. STOCHASTIC PROCESSES IN SOCIOLOGY

Spring term. Credit four hours. Prerequisite: one year of college mathematics and one term of statistics or consent of the instructor.

Finite probability theory is reviewed. Recurrent events, stationary Markov chains, and dynamic Markov processes are evaluated as models of social organization and change.

### 527. SOCIOLOGICAL APPLICATION OF GAME AND DECISION THEORY

Spring term. Credit four hours. Prerequisite: one year of college mathematics and one term of statistics or consent of instructor.

A critical review of game and decision theory as applied to problems in sociology.



### 528. MEASUREMENT AND LATENT STRUCTURE THEORY

Spring term. Credit four hours. Prerequisite: 524 or consent of the instructor.

The problem of index construction and classification is the focus for a study of factor analysis, latent structure analysis, and nonmetric multidimensional scaling procedures. Emphasis is on the logic of models and their relations to social theory and data. Computer routines will be used.

### 530. INTRODUCTION TO DEMOGRAPHY

Spring term. Credit four hours. Prerequisite: consent of the instructor.

A survey of the methods, theories, and problems of contemporary demography. Special attention is directed to the social determinants and consequences of fertility, mortality, and migration. The populations of both developed and developing areas are examined.

### 531. DEMOGRAPHIC THEORY

Fall term. Credit four hours.

Deals with theory construction, hypothesis derivation, and the integration of theory and research in demography. Although emphasis is placed on contemporary theories, earlier formulations beginning with Malthus also are examined insofar as they deal with fertility, mortality, migration, and the people-resource question.

### 535. TECHNIQUES OF DEMOGRAPHIC ANALYSIS

Fall term. Credit four hours. Prerequisite: 230 or consent of the instructor.

Methods of processing and analyzing demographic data. Measures of mortality, fertility, and migration as applied to census and vital statistics data will be analyzed, and the more general applications of demographic techniques to other classes of data illustrated.

### 536. DEMOGRAPHIC RESEARCH METHODS

Spring term. Credit four hours. Prerequisite: 230 or consent of the instructor.

Application of basic demographic techniques to selected regions of the world, particularly those less developed economically. Attention is directed to field survey techniques, including sampling and questionnaire construction, as well as formal demographic analysis. Students may work on selected research projects.

### 539. POPULATION IN TROPICAL AFRICA

Fall term. Credit four hours. Prerequisite: 230 or consent of the instructor.

The study of population trends in Tropical Africa. Analyses will be made of the basic demographic factors: sources of data; levels of mortality and fertility; migration and urbanization; population problems and population policies. An attempt will be made to determine research priorities and strategies in African population studies.

### 541. SOCIAL ORGANIZATION AND CHANGE

Fall term. Credit four hours.

An analysis of major problems in theory and research in the general field of social organization and change. The subject will be studied from the standpoint of the nature and size of the social system (small groups, communities, large organizations, societies) and also in terms of its social processes and properties (integration, authority, conformity, and deviance).

### 543. FAMILY, KINSHIP, AND SOCIETY

Fall term. Credit four hours. Prerequisite: consent of the instructor.

A systematic analysis of the nuclear family, extended family systems, and corporate kinship groups cross-culturally and historically. The relation of family structures to other institutional areas; for example, economy, polity, stratification, and their relations to specific social processes such as demographic events, social disorganization, mobility.

547. CONTEMPORARY RESEARCH ON SOCIAL STRATIFICATION

Fall term. Credit four hours. Prerequisite: consent of the instructor.

The focus will be on systematic research on American social classes, with detailed examination of methodological issues. Comparative materials from other industrial societies will lend perspective. Classic theory will be used from time to time, but not studied as a central theme.

583-584. PROSEMINAR IN SOCIAL PSYCHOLOGY

Either term. Credit four hours.

Critical analysis of the major current theories and research, emphasizing sociological perspectives in the fall and psychological ones in the spring.

585. SOCIAL STRUCTURE AND PERSONALITY

Fall term. Credit four hours. Prerequisite: consent of the instructor.

A discussion seminar examining the impact of structural factors on personality development, and on the ways in which individual internal states and behavioral patterns affect the functioning of social systems.

602. SEMINAR: THEORY

Spring term. Credit four hours.

621. SEMINAR: ISSUES IN THE METHODOLOGY OF THE SOCIAL SCIENCES

Fall term. Credit four hours.

622. SEMINAR: ISSUES IN THE METHODOLOGY OF THE SOCIAL SCIENCES

Spring term. Credit four hours.

632. SEMINAR: CONTEMPORARY RESEARCH IN DEMOGRAPHY

Spring term. Credit four hours.

Critical analysis of recent research investigations in Latin American demography.

633. SEMINAR: COMPARATIVE URBANIZATION

Fall term. Credit four hours. Prerequisite: consent of the instructor.

An analysis of processes, problems, and prospects of urbanization in an international context. Comparisons with other variables of social change will be considered. The growth, nature, and roles of urban centers will be examined. Urbanization will be viewed from an interdisciplinary perspective. Attention will be directed to possible comparisons between developed and developing nations in this regard.

634. SEMINAR: POPULATION, HISTORY, AND SOCIETY

Spring term. Credit four hours.

An introduction to problems of historical analysis in sociology, with a special emphasis upon topics of demographic concern.

636. SEMINAR: MANPOWER RESEARCH

Spring term. Credit four hours.

641. SEMINAR: THEORY AND RESEARCH

Fall term. Credit four hours.

643. SEMINAR: SOCIOLOGY OF MEDICINE

Fall term. Credit four hours.

648. SEMINAR: REFORM VS. REVOLUTION IN LATIN AMERICA:  
BRAZIL, CUBA, MEXICO

Spring term. Credit four hours. Prerequisite: consent of the instructor. Reading knowledge of Spanish or Portuguese recommended.

The seminar will confront this issue: is development possible by the "reform" route, or is "revolution" necessary? Three test cases will be studied in depth: Brazil's attempts to modernize with minor reforms; Cuba's profound revolution; and Mexico's early revolution which later turned conservative.

657. SEMINAR: SOCIAL CHANGE AND THE COMMUNITY

Fall term. Credit four hours.

The seminar will concentrate upon the topics of leadership, religious organizations, and the process of social change.

659. SEMINAR: SOCIOLOGY OF ADULTHOOD AND AGING

Fall term. Credit four hours. Prerequisite: consent of the instructor.

The focus will be upon the latter half of the life cycle and will utilize both institutional and social psychological frameworks. Theory and research related to the following topics will be discussed: the middle aged and the elderly in relation to family, economy, and the polity; demographic trends and issues; social aspects of health; adult socialization; role changes and role crises. Emphasis will depend upon the background and interests of the students.

661. SEMINAR: TOPICS IN SOCIAL SYSTEMS ANALYSIS

Spring term. Credit four hours.

Concepts and theories. Empirical referent will vary from year to year.

662. SEMINAR: SOCIAL SYSTEMS ANALYSIS

Spring term. Credit four hours.

Foundations of social systems analysis.

663. SEMINAR: SOCIAL SYSTEMS ANALYSIS

Fall term. Credit four hours.

Foundations of social systems analysis.

681-682. SEMINAR IN SOCIAL PSYCHOLOGY

Either term. Credit four hours.

Research-oriented analysis of selected topics in social psychology.

683. RESEARCH PRACTICUM IN SOCIAL PSYCHOLOGY

Fall term. Credit four hours.

Research on interaction and social structure.

685. SEMINAR: SOCIAL PSYCHOLOGY OF MODERNIZATION

Fall term. Credit four hours.

An analysis of the interacting effects of social structure and personality on social change in developing countries.

687-688. SOCIAL PSYCHOLOGY AND PERSONALITY COLLOQUIA  
(Also Psychology 687-688)

Either term. Credit two hours.

Weekly lectures by visiting and Cornell faculty, sponsored by the Inter-departmental Program in Social Psychology and Personality, are open to the general public. Graduate students may earn credit by regular attendance, reading selected writings by each speaker, and writing an integrative term paper. Each semester the colloquia will concentrate on a new theme.

691-692. DIRECTED RESEARCH

Either term. Credit to be arranged.

PLANNING 712. INTRODUCTION TO HUMAN ECOLOGY

## STATISTICS

Faculty: Robert E. Bechhofer, Isadore Blumen, Lawrence D. Brown, Mark Brown, Roger Farrell, Walter T. Federer, Ivor Francis, Harry Kesten, Jack Kiefer, Philip J. McCarthy, Narahari U. Prabhu, Douglas S. Robson, Shayle R. Searle, Daniel Solomon, Frank L. Spitzer, Howard M. Taylor 3rd, N. Scott Urquhart, Lionel Weiss, Jacob Wolfowitz.

Field Representative: Isadore Blumen, 360 Ives Hall.

### MAJOR SUBJECT

Statistics

### MINOR SUBJECTS

Provisions for minoring in statistics are given in the descriptions of the Fields of Operations Research, Industrial and Labor Relations, Mathematics, and Plant Breeding and Biometry contained in the *Announcements* of the various areas of the Graduate School.

**ADMISSION REQUIREMENTS.** Since one of the principal aims of graduate work in the Field of Statistics is that of training individuals who will have a thorough knowledge of the theoretical basis of modern statistical method and will have demonstrated ability to make significant contributions to this theory, applicants should ordinarily have obtained nearly the equivalent of an undergraduate major in mathematics. It is strongly recommended that applicants resident in the United States during the year before entering the Graduate School present scores on the Graduate Record Examination Aptitude Test.

**LANGUAGE REQUIREMENT.** There is no foreign language requirement for the M.S. degree. A candidate for the Ph.D. degree must demonstrate reading ability in one language besides English, chosen from among French, German, or Russian.

**PROGRAM OF STUDY.** A student majoring in the Field of Statistics must complete a graduate sequence of courses in mathematical statistics which has been approved by his Special Committee. Other course work will be chosen from among the offering of the members of the Field, as listed below. A doctoral student in the Field ordinarily has two minor subjects but

may, in consultation with the chairman of his Special Committee, choose to work in one minor subject. One minor subject will often be in an area of interest to the student in which the methods of statistics find extensive application. A second minor is usually devoted to mathematics, computing, or a similar subject.

**PH.D. EXAMINATIONS.** In addition to the Admission to Candidacy Examination, which will ordinarily be administered by the student's Special Committee during or at the end of the third year of graduate study, and the Final Examination on the thesis, the student will be given a qualifying examination. This examination will occur shortly after the first year of graduate study. It will serve to determine the ability of the candidate to pursue doctoral studies and to assist the Special Committee in developing a program of study for the candidate.

**TEACHING AND RESEARCH INTERESTS OF THE FACULTY.** In extremely broad terms, the teaching and research interests of faculty members are in the following general areas: biological applications of probability and statistics (Federer, Robson, Searle, Solomon, Urquhart); engineering and operations research applications of probability and statistics (Bechhofer, M. Brown, Prabhu, Taylor, Weiss); mathematical theory of probability and statistics (L. D. Brown, Farrell, Kesten, Kiefer, Spitzer, Wolfowitz); social science applications of probability and statistics (Blumen, Francis, McCarthy).

Some of the more specific areas of current interest are: analysis and probability theory (M. Brown, Kesten, Spitzer); design and analysis of experiments (Bechhofer, Federer, Kiefer, Robson, Searle, Urquhart, Wolfowitz); high speed computing (Searle); mathematical theory of statistics (Farrell, Kiefer, Solomon, Wolfowitz); multiple decision procedures (Bechhofer); multivariate analysis (Blumen, Francis, Urquhart); nonparametric statistics (Blumen, Weiss); queuing and inventory theory (Prabhu); sampling theory (McCarthy, Robson); sequential sampling methods (Kiefer, Weiss); statistical control theory (Taylor); statistical genetics (Federer, Robson, Searle).

## Courses

Descriptions of the following courses may be found in the *Announcements* of the various areas of the Graduate School under the Fields with which they are identified: in those sections reference is also made to several advanced seminars, both formal and informal, whose content varies from year to year.

## ADVANCED UNDERGRADUATE AND MASTER'S LEVEL COURSES

### Operations Research

9460. INTRODUCTION TO PROBABILITY THEORY WITH  
ENGINEERING APPLICATIONS

9470. INTRODUCTION TO STATISTICAL THEORY WITH  
ENGINEERING APPLICATIONS

9512. STATISTICAL METHODS IN QUALITY AND RELIABILITY  
CONTROL

## 9570. INTERMEDIATE ENGINEERING STATISTICS

## Industrial and Labor Relations

310. DESIGN OF SAMPLE SURVEYS

311. STATISTICS II

410. TECHNIQUES OF MULTIVARIATE ANALYSIS

411. STATISTICAL ANALYSIS OF QUALITATIVE DATA

## Mathematics

371. BASIC PROBABILITY

472. STATISTICS

## Plant Breeding and Biometry

411. STOCHASTIC MODELS IN BIOLOGY

417. MATRIX ALGEBRA IN BIOLOGY AND STATISTICS

510. STATISTICAL METHODS I

511. STATISTICAL METHODS II

## ADVANCED MASTER'S AND DOCTOR'S LEVEL COURSES

## Operations Research

9560. APPLIED STOCHASTIC PROCESSES

9561. QUEUING THEORY

9562. INVENTORY THEORY

9565. TIME SERIES ANALYSIS

9571. DESIGN OF EXPERIMENTS

9572. STATISTICAL DECISION THEORY

9573. STATISTICAL MULTIPLE DECISION PROCEDURES

## Industrial and Labor Relations

610. ECONOMIC AND SOCIAL STATISTICS

614. THEORY OF SAMPLING

## Mathematics

- 571. PROBABILITY
- 572. STATISTICAL ANALYSIS
- 574. ADVANCED PROBABILITY
- 575. INFORMATION THEORY
- 673. ANALYSIS OF VARIANCE
- 674. DESIGN OF EXPERIMENTS
- 675. STATISTICAL ESTIMATION
- 676. DECISION FUNCTIONS
- 677-678. STOCHASTIC PROCESSES

## Plant Breeding and Biometry

- 513. DESIGN OF EXPERIMENTS I
- 514. DESIGN OF EXPERIMENTS II
- 517. LINEAR MODELS
- 518. SPECIAL TOPICS IN SEQUENTIAL SAMPLING, BIOASSAY  
NONPARAMETRIC STATISTICS, ETC.
- 519. STATISTICAL GENETICS

## TEXTILES AND CLOTHING

Faculty: Rachel Dardis, Bertha A. Lewis, Elsie F. McMurry, Edward R. Ostrander, Mary Purchase, Betty F. Smith, Evelyn E. Stout, M. Vivian White.

Field Representative: Betty F. Smith, 285 Martha Van Rensselaer Hall.

### MAJOR SUBJECTS

(M.S.) Textiles  
(M.S. or M.A.) Textiles and  
Clothing

### MINOR SUBJECTS

Textiles  
Textiles and Clothing

Qualified doctoral candidates wishing to do advanced work in the Field of Textiles and Clothing may major in a related Field and do thesis research in the area of Textiles and Clothing. Doctoral candidates may minor in this Field.

**ADMISSION REQUIREMENTS.** Admission is based primarily on evidence of the student's ability to do advanced work. A general or specialized major in home economics is acceptable as background for study in this Field. In addition to courses in textiles and clothing, students should have preparation in chemistry (general and organic), economics, mathematics, physics,

and psychology or sociology. Students with B.S. degrees in relevant disciplines, e.g., chemistry, economics, psychology, and fine arts, are also encouraged to undertake graduate work in this field. Deficiency in the recommended background subjects does not preclude admission but may increase the time necessary to earn a degree. All applicants are required to submit scores of the Graduate Record Examination Aptitude Test.

**RESEARCH AND STUDY OPPORTUNITIES.** Degree programs are individually planned. Excellent facilities are available for research in all areas of the field. Ongoing research projects allow for student participation. A brochure describing the facilities and research activities is available from the Field Representative.

A thesis and final examination are required for both the M.A. and M.S. degrees, but there is no foreign language requirement.

Since the subject matter in Textiles and Clothing is based on several disciplines, appropriate minor areas include anthropology, business administration, chemistry, economics, fine arts, history, industrial and labor relations, psychology, sociology and statistics.

A number of teaching fellowships and research assistantships are available in the Department of Textiles and Clothing. Students in the field are given preference for the Herbert and Lillian M. Powell Fellowship, awarded each year.

## Special Interests of the Faculty

Textile chemistry: Professors Smith and Lewis.

Science and technology of textiles: Professor White.

Physical aspects of textile fibers and fabrics: Professor Stout.

Soiling of textile fibers and fabrics: Professor Purchase.

Textile economics: Professor Dardis.

Textile marketing: Professors Dardis and Ostrander.

Psychological aspects of textiles and clothing: Professor Ostrander.

History of costume: Professor McMurry.

Apparel design: Professor McMurry.

## Courses

### 431. HISTORY OF COSTUME

Fall term. Credit three hours. Prerequisite: Any three or four credit course at the 200 or 300 level in History of Art. Mrs. McMurry.

A comparative study of dress of selected cultures from ancient times to the end of the fifteenth century, stressing (1) the relationship of social, economic, and political factors affecting dress and the mores as expressed through dress, and (2) the contribution of ancient cultures to the apparel arts of the Western world.

Illustrated lectures; readings; term problems; direct study of the basic forms of dress as exemplified in the Costume Collection. A two-day trip to New York to study museum collections is arranged when feasible. Students are responsible for field trip expenses.

### 432. HISTORY OF COSTUME

Spring term. Credit three hours. Prerequisite: any three or four credit course at the 200 or 300 level in History of Art. Mrs. McMurry.



A comparative study of dress of selected cultures from the sixteenth century through the first half of the twentieth century. Emphasis will be placed upon the development of the apparel arts of Western civilization and the factors which brought about change and development.

Illustrated lectures, readings, and term problems to bring students into direct contact with the Costume Collection and other primary sources such as the Regional History Collection.

#### 433. ECONOMICS OF THE TEXTILE AND APPAREL INDUSTRIES

Fall term. Credit three hours. Prerequisite: 170 or permission of instructor, and Economics 101 and 102 or equivalent. Miss Dardis.

Trends in the production and consumption of textiles and apparel; economic analysis of the textile and apparel industries; factors affecting changes in output, price, location, and market structure.

#### 434. PSYCHOLOGY OF TEXTILES AND APPAREL

Spring term. Credit three hours. Prerequisite: H.D. & F.S. 115, and Psychology 101 or Education 110, or equivalent. Mr. Ostrander.

Course focus is on the consumer as a decision maker. Psychological, social, and cultural factors contributing to consumer behavior are explored in terms of theories, models, and empirical research findings. An analytical approach is used. Students formulate and plan an empirical research project.

#### 476. TEXTILE CHEMISTRY

Fall term. Credit four hours. Prerequisite: 170 or 176, and one year of organic chemistry (Chemistry 357-358 preferred), or permission of instructor. Limited to ten students. Miss Smith.

An introduction to the chemistry of the major classes of natural and man-made fibers, including their structure, properties, and reactions. Laboratory work will include the qualitative identification of textile fibers, and a consideration of chemical damage to fabrics, finishes, and dyes.

#### 477. STRUCTURE AND PROPERTIES OF TEXTILE FIBERS

Spring term. Credit four hours. Prerequisite: organic chemistry, Physics 101-102 or 207-208, and permission of instructor. Miss White.

Selected topics dealing with relationships between structure and properties of textile fibers. Emphasis is on properties influencing utility and aesthetic appeal of textile materials. Consideration is also given to fiber modifications imparted by physical and chemical means during manufacture and use. Laboratories include an introduction to experimental techniques and independent investigations.

#### 500. SPECIAL PROBLEMS FOR GRADUATE STUDENTS

Fall and spring terms. Credit to be arranged. For students recommended by their chairmen and approved by the head of the department and the instructor in charge for independent, advanced work. Department faculty.

#### 533. SEMINAR: ECONOMICS OF THE TEXTILE AND APPAREL INDUSTRIES

Spring term. Credit one hour. Prerequisite: 433. Miss Dardis.

Current problems of the textile and apparel industries; textile trade fluctuations; international trade in textiles and textile products.

#### 534. PSYCHOLOGY OF CONSUMER BEHAVIOR

Fall term. Credit three hours. Prerequisite: H.D. & F.S. 115, and Psychology 101 or Education 110, or equivalent. Mr. Ostrander.

Course focus is on consumer behavior, and attitudes toward products, producers, and outlets are considered as a function of advertising and other sources of information. The dynamics of attitude and behavioral change are studied, using models and theories which incorporate demographic and personality variables. Students formulate and plan an empirical research project.

#### 551. APPAREL DESIGN: DESIGNERS' PROBLEMS

Spring term. Credit three hours. Prerequisite: 350; 333 desirable. Alternate-year course; offered in 1970-71.

Methods of developing apparel design ideas adaptable to present-day mass production methods. Development of designs for different levels of production costs and various categories of apparel. Studio work involves independent investigation by the student. Lectures, discussions, field trips. Students are responsible for field trip expense.

#### [555. DESIGN AND COLOR IN APPAREL: ADVANCED COURSE]

Spring term. Credit three hours. Prerequisite: 350, Housing and Design 200, or Drawing 111, or Art 340a. Mrs. McMurry. Alternate-year course; not offered in 1970-71.

#### 570. SEMINAR: STRUCTURE AND PROPERTIES OF TEXTILE MATERIALS

Fall term. Credit two hours. Registration by permission of instructor. Miss White.

Critical review of research literature. Consideration of current theories regarding the relationships of yarn and fabric structures, finish, and conditions of service to the performance of textile materials.

#### 575. TEXTILES: CHARACTERIZATION AND EVALUATION

Spring term. Credit three hours. Prerequisite: 475; statistics, and 476 and 477 recommended. Miss Stout.

A series of cooperative class problems involving various fibers in fabric form, testing procedures, and specialized equipment. Physical, chemical, and microscopical procedures are combined in studying certain problems.

#### 576. ADVANCED TEXTILE CHEMISTRY

Spring term. Credit four hours. Prerequisite: 475 and 476 and quantitative analysis or permission of instructor. Limited to ten students. Miss Smith.

An examination of the molecular structure, properties, and reactions of the major classes of natural and man-made fibers. Laboratory work will include a study of the molecular structure of a cellulosic, a protein, and a man-made fiber and the quantitative analysis of textile fibers and materials.

#### 588. SEMINAR IN TEXTILE CHEMISTRY

Spring term. Credit one hour. Registration by permission of instructors. Misses Lewis and Smith.

A critical discussion of current research literature in the field.

#### 590. INSTRUMENTAL ANALYSIS OF TEXTILE MATERIALS

Fall term. Credit two hours. Registration by permission of instructor. Miss Lewis.

A laboratory course designed to illustrate the use of instrumental analytical techniques in the study of the textile materials.

## 210 TEXTILES AND CLOTHING

### 599. THESIS AND RESEARCH

Fall and spring terms. Credit to be arranged. Registration by permission of instructor. Department faculty.

### 608. SEMINAR IN TEXTILES AND CLOTHING

Fall and spring terms. No credit. S-U grades only. Department faculty.

Consideration of research areas and methods in textiles and clothing, and of interdisciplinary relationships between textiles and clothing and other fields. Presentation of student thesis plans and reports, student-faculty discussions, and outside speakers.

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# Graduate School Calendar, 1969-70

## FALL TERM

1969-70

Registration, new students	Sept. 11
Registration, old students	Sept. 12
Fall term instruction begins, 7:30 A.M.	Sept. 15
Last day for filing statement-of-courses form and change-of-committee form and for new students to file nomination-of-committee forms	Sept. 26
Last day for old students to take Admission-to-Candidacy Examinations in order to have them considered as of the beginning of the term	Oct. 15
Language Examinations: French, German, Russian, and Spanish	Nov. 1
Last day for change of course registration	Nov. 21
Thanksgiving recess: Instruction ends, 1:10 P.M.	Nov. 26
Instruction resumes, 7:30 A.M.	Dec. 1
Language Examinations: French, German, Russian, and Spanish	Dec. 6
Fall term classes end, 1:10 P.M.	Dec. 20
Christmas recess	Dec. 20
Last day for completing all requirements for January degrees	Jan. 16
Independent study period begins	Jan. 5
Final examinations begin	Jan. 12
Final examinations end	Jan. 20
Interession begins	Jan. 21

## SPRING TERM

Registration, new students	Jan. 29
Registration, old students	Jan. 30
Language examinations: French, German, Russian, and Spanish	Jan. 31
Last day for filing fellowship and scholarship applications for the following year	Feb. 1
Spring term instruction begins, 7:30 A.M.	Feb. 2
Last day for filing statement-of-courses form and change-of-committee form and for new students to file nomination-of-committee forms	Feb. 13
Last day for old students to take Admission-to-Candidacy Examinations to have them considered as of the beginning of the term	March 1
Spring recess: Instruction suspended, 1:10 P.M.	March 28
Instruction resumed, 7:30 A.M.	April 6
Last day for change of course registration	April 10
Language examinations: French, German, Russian, and Spanish	May 2
Spring term classes end, 1:10 P.M.	May 16
Independent study period begins	May 18
Last day for completing all requirements for June degrees	May 22
Final examinations begin	May 25
Final examinations end	June 2
Commencement	June 8

## SUMMER

Summer Research period begins	June 3
Registration for Summer Session	June 22 (8-week)
	July 1 (6-week)
Last day for filing statement-of-courses form and change-of-committee form and for new students to file nomination-of-committee forms	July 7
Language examination: French, German, Russian, and Spanish	July 18
Summer Session ends	Aug. 14
Last day for completing all requirements for September degrees	Aug. 28
Summer Research period ends	Sept. 11



# Graduate School Calendar, 1970-71 (Tentative)

## FALL TERM

	1970-71
Registration, new students	Sept. 10
Registration, old students	Sept. 11
Fall term instruction begins, 7:30 A.M.	Sept. 14
Last day for filing statement-of-courses form and change-of-committee form and for new students to file nomination-of-committee forms	Sept. 25
Last day for old students to take Admission-to-Candidacy Examinations in order to have them considered as of the beginning of the term	Oct. 15
Last day for change of course registration	Nov. 20
Thanksgiving recess: Instruction ends, 1:10 P.M.	Nov. 25
Instruction resumes, 7:30 A.M.	Nov. 30
Fall term classes end, 1:10 P.M.	Dec. 19
Christmas recess	Dec. 19
Last day for completing all requirements for January degrees	Jan. 8
Independent study period begins	Jan. 4
Final examinations begin	Jan. 11
Final examinations end	Jan. 19
Intersession begins	Jan. 20

## SPRING TERM

Registration, new students	Jan. 28
Registration, old students	Jan. 29
Last day for filing fellowship and scholarship applications for the following year	Feb. 1
Spring term instruction begins, 7:30 A.M.	Feb. 1
Last day for filing statement-of-courses form and change-of-committee form and for new students to file nomination-of-committee forms	Feb. 12
Last day for old students to take Admission-to-Candidacy Examinations to have them considered as of the beginning of the term	March 1
Spring recess: Instruction suspended, 1:10 P.M.	March 27
Instruction resumed, 7:30 A.M.	April 5
Last day for change of course registration	April 9
Spring term classes end, 1:10 P.M.	May 15
Independent study period begins	May 17
Last day for completing all requirements for June degrees	May 24
Final examinations begin	May 24
Final examinations end	June 1
Commencement	June 7

## SUMMER

Summer Research period begins	June 2
Registration for Summer Session	June 21 (8-week)
	June 30 (6-week)
Last day for filing statement-of-courses form and change-of-committee form and for new students to file nomination-of-committee forms	July 7
Summer Session ends	Aug. 13
Last day for completing all requirements for September degrees	Aug. 30
Summer Research period ends	Sept. 10